

# TCA

The Canadian Amateur

Canada's Amateur Radio Magazine

La Revue des Radioamateurs Canadiens

NOVEMBER / DECEMBER 2013 – NOVEMBRE / DÉCEMBRE 2013

*Season's Greetings – Joyeuses Fêtes*

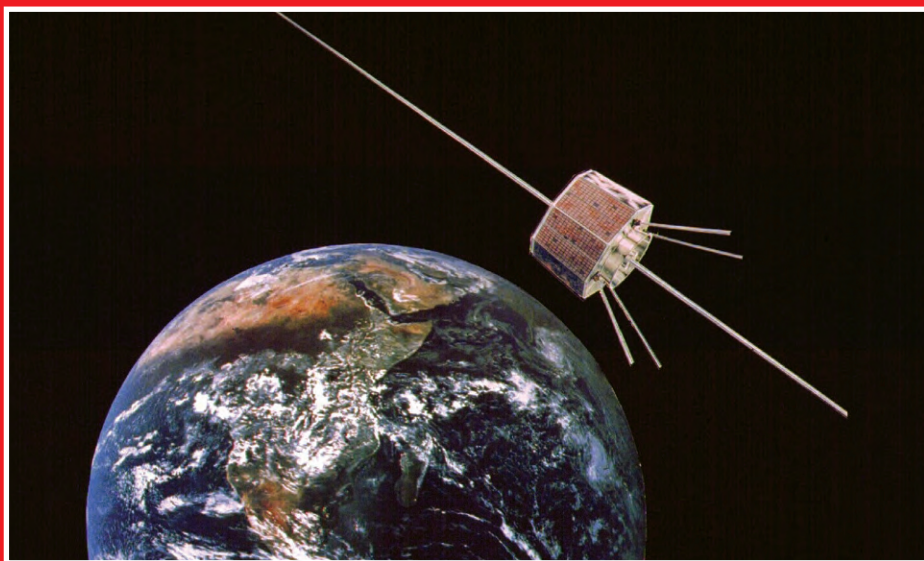
**XL3S: Bicentennial of Laura Secord's Journey**



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NOVEMBER NOVEMBRE  
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2013

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"This year the Niagara Peninsula ARC Honoured Laura Secord's arduous trek through the fields and woods of the Niagara Peninsula to warn First Nation warriors and British Lieutenant FitzGibbon of an attack by the American forces." – see page 49.

"AMSAT-OSCAR 7 (AO-7) was launched on November 15, 1974 by a Delta 2310 launcher from Vandenberg Air Force Base near Lompoc, California as a secondary payload along with ITOS-G (NOAA 4) and the Spanish INTASAT satellite." – see page 28.



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Articles, reviews, letters, features, suggestions, photographs and essays are welcomed. Manuscripts should be legible and include the contributor's name, call sign, phone number(s) and addresses (mail, email and packet, as applicable).

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(\*Note: Method B is preferred).

## Silent Keys – In Memoriam

*With regret, we record the passing of these Amateur Radio operators.  
Nous avons le regret de vous annoncer le décès des radioamateurs suivants.*

VA3AAG – Gerry Makenbach, of Barrow Bay, ON, at age 75, on June 21, 2013.  
VA3CD – Chuck Hobbs, of Saint Catharines, ON, at age 80, on June 9, 2013.  
VA3EJD – John Duimering, of New Hamburg, ON, at age 81, on September 14, 2012.  
VA3HD – Harold Dupuis (VE3EFO\*), of St George, ON, at age 69, on November 11, 2012.  
VA3HGS – Hector Smith, of Niagara Falls, ON, at age 77, on February 5, 2013.  
VA3VKP – Serita Chiswell, of Elliot Lake, ON, at age 73, on March 5, 2013.  
VE1DSG – David Gilmour, of Bridgewater, NS, at age 92, on July 25, 2013.  
VE1EO – Gordon Beaman, of Summerside, PE, at age 79, on August 17, 2013.  
VE1HH – George Coady, of New Glasgow, NS, at age 86, on September 5, 2013.  
VE1JKW – John Walker, of Trenton, NS, at age 63, on August 24, 2013.  
VE2QR\* – Paul Uttaro, of St-Jean, QC, at age 85, in Spring 2012.  
VE3AHS – Gene DiLeo, of Welland, ON, at age 94, on November 7, 2012.  
VE3ASR – Len Brooker, of Belleville, ON, at age 75, on September 19, 2013.  
VE3BAP\* – Bill Bott, of Ottawa, ON, at age 94, on September 3, 2013.  
VE3DDF – Pat Shewan, of Colborne, ON, at age 84, on July 7, 2013.  
VE3DKF – Jim Foote, of Sauble Beach, ON, on May 20, 2013.  
VE3DNM – Max Pizzolato, of Hamilton, ON, at age 79, on January 25, 2013.  
VE3EUI – Denny Wilkinson, of Sault Ste Marie, ON, on October 29, 2011.  
VE3EYL – Frances Berry, of London, ON, on October 29, 2011.  
VE3FFT – Jack Kennedy, of Fort Erie, ON, at age 87, on December 30, 2012.  
VE3FOO – Fred Taturnic, of Fonthill, ON, at age 85, on September 18, 2012.  
VE3GMR – Jim Chase, of Niagara Falls, ON, at age 90, on January 26, 2012.  
VE3GVB – Frank Brett, of Lindsay, ON, at age 75, on September 23, 2012.  
VE3HR – Bill Cate, of Whitby, ON, at age 101, on May 7, 2013.  
VE3ICC – Gunnar Christensen, of Auburn, ON, at age 77, on February 25, 2012.  
VE3INR – Gerhard Rubscheit, of Indian River, ON, on September 14, 2013.  
VE3IQJ – Helen Antle, of Strathroy, ON, at age 77, on August 14, 2013.  
VE3IXR – Murray Long, of Elmwood, ON, at age 63, on March 14, 2013.  
VE3KPP – Ken Park (VE3HW\*), of Barrie, ON, at age 67, on May 17, 2013.  
VE3KYU – Ken Young, of Sarnia, ON, at age 88, on August 30, 2013.  
VE3OGA – Greg Anderson, of Bancroft, ON, at age 82, on November 25, 2012.  
VE3TWQ – Kavan Drumm, of Brampton, ON, at age 54, on November 13, 2012.  
VE3WFS – Winston Seeney, of Havelock, ON, at age 72, on April 12, 2013.  
VE3WHS – Bill Smith, of Port Elgin, ON, at age 71, on September 13, 2013.  
VE3WMI – Ivan Williams, of Iroquois Falls, ON, on July 2, 2013.  
VE3YBM – Bruce Montgomery, of Kitchener, ON, at age 50, on August 3, 2013.  
VE3YYL – Larry Becks, of McKerrow, ON, at age 66, on July 31, 2013.  
VE4ADA – Terry Watling, of Winnipeg, MB, at age 68, on August 22, 2013.  
VE5JCA – John Anaka, of Moose Jaw, SK, at age 79, on July 28, 2013.  
VE5KA – Russell King, of Hanley, SK, at age 85, on August 29, 2013.  
VE5QS – Fred Selsey, of Harris, SK, at age 95, on August 15, 2013.  
VE5RHR – Richard Raine, of Regina, SK, at age 79, on August 1, 2013.  
VE6PF – Ken Curry (VE3PF\*), of Edmonton, AB, at age 92, on September 18, 2013.  
VE7AJX – Terry Coan, of North Vancouver, BC, at age 73, on June 26, 2013.  
VE7AQC – Don Campbell, of Vancouver, BC, at age 89, on August 20, 2013.  
VE7BLA – Noulán Bowker, of North Vancouver, BC, at age 66, on August 7, 2013.  
VE7CP – Larry Nelson, of Penticton, BC, at age 100, on August 24, 2013.  
VY2EG – Edwin Gallant, of Hunter River, PE, at age 66, on August 5, 2013.

*Note: In the above list an \* indicates a previous call sign or that a call sign has been reissued.  
The list of Silent Keys is prepared by volunteers at RAC Headquarters at <rachq@rac.ca>.*

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See pages  
59-64 for  
Section Reports.



# A MESSAGE FROM THE PRESIDENT / UN MESSAGE DU PRÉSIDENT



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## Report to RAC Members at the Annual General Meeting Rapport aux membres de RAC à l'Assemblée générale annuelle

*2012 was a good year for the Radio Amateurs of Canada.*

I will outline our successes and challenges in 2012, take the opportunity to discuss some of our activities in 2013 and touch upon the challenges of the future.

After two and a half years of hard work, RAC is on a firm financial footing. We became solvent as of the end of the second quarter of 2012.

Our recent financial history is important to review.

At the AGM in 2010, I announced the very real probability of RAC's financial failure in 2011 unless we continued the dramatic fiscal steps that RAC had initiated early in 2010. Year over year deficit spending was unsustainable. We were insolvent and on the very brink of bankruptcy. We needed to slash expenditures and increase revenues.

I am pleased to announce to the membership today that RAC is solvent and the risk of bankruptcy and dissolution is receding. This significant accomplishment was due to the efforts, commitment and sacrifice of many people. I want to thank our Board Members and Executive that faced the challenge and worked hard and with commitment to make RAC succeed. As well as providing their time, intelligence, work and resolve, many Board and Executive members spent thousands of dollars out of their own pockets; covering their own expenses and thus provided "hidden subsidies" to RAC and its members. A thank-you to the Administration and Finance Committee members that met monthly and spent many hours analyzing costs and seeking cost effective solutions.

I want to thank our growing number of Maple Leaf Members for believing in and supporting RAC. I want to thank our Corporate Sponsors for their contributions. I want to thank our Life Members for supporting the changes that we need to make. I want to thank all our members for sticking with us during our time of financial trial.

But the story is a lot more than finances. I am pleased to tell you that we had many other successes in 2012 and continuing into 2013.

RAC's role was significant in helping to obtain an international allocation at World Radio Conference 2012 (WRC12): 472 to 479 kHz. The Canadian government has now consulted domestically as part of the process to make the changes required to allow Canadian Amateurs to use 472 to 479 kHz. RAC has responded to that consultation. Our advocacy will continue domestically as acceptance at WRC12 does not automatically translate into a domestic allocation.

I would like to remind members that RAC has a sound international reputation and many of our sister societies in the International Amateur Radio Union look to us for support and expertise. We have historically punched above our weight and will continue to do so.

The government has also consulted on a domestic allocation for six channels in the 60 metre band. We have responded to that consultation and are waiting the Minister's approval for Amateurs to use those channels. In a recent letter from Minister Moore to the RAC President (September 2013) the Minister noted that "comments received during the consultation were positive and many underlined the role of Amateur Radio in emergency and

*2012 fut une année fructueuse pour Radio Amateurs du Canada.*

J'ai l'intention de vous énumérer nos succès en 2012, saisir l'occasion de discuter certaines de nos activités de 2013 avec vous et aborder les défis du futur.

Après deux ans et demi d'intense travail, RAC est maintenant en bonne posture financière. C'est à la fin du deuxième trimestre de 2012 que nous sommes redevenus solvables.

Il est important de revisiter notre histoire financière récente.

À l'AGM de 2010, j'annonçais la probabilité d'une faillite financière de RAC en 2011 à moins que soient poursuivis les efforts de redressement amorcés par RAC en 2010. Année après année, le cumul des déficits devenait intenable. Nous étions devenus insolvables et acculés à la faillite. Il nous fallait couper dans les dépenses et accroître les revenus.

Je suis heureux d'annoncer à nos membres aujourd'hui que pour la première fois depuis plusieurs années RAC est redevenu solvable et que le risque de faillite est en recul. Cette réussite d'envergure doit être portée au compte des efforts, des engagements et des sacrifices de plusieurs personnes. Je veux remercier les membres du Conseil d'administration et de l'Exécutif qui ont relevé le défi, qui se sont engagés et travaillé fort pour assurer le succès de RAC. En plus d'avoir donné de leur temps, fait preuve d'intelligence, s'investir et travailler, plusieurs membres du Conseil et de l'Exécutif ont fourni des milliers de dollars de leurs propres avoirs pour payer leurs propres dépenses, subventionnant ainsi, en quelque sorte, RAC et ses membres. Merci aux responsables de l'administration et des finances qui ont consacré plusieurs heures à analyser les coûts et rechercher des moyens de les réduire.

Je veux remercier les membres Maple Leaf, dont le nombre est grandissant, de soutenir RAC et d'y croire. Je veux aussi remercier nos commanditaires pour leurs contributions, et nos membres à vie de supporter les changements qu'il faut apporter. Aussi nos remerciements à tous nos membres de demeurer avec nous durant notre remise en état de nos finances.

Mais notre histoire concerne beaucoup plus que la situation financière. Il me fait plaisir de vous entretenir de nos nombreux succès de 2012, lesquels se poursuivent en 2013.

Le rôle de RAC fut significatif pour l'obtention de l'allocation internationale des fréquences de 472 à 479 KHz à la World Radio Conference 2012 (WRC12). Le gouvernement canadien considère maintenant que la consultation populaire fait partie du processus de changement requis pour permettre aux amateurs canadiens d'utiliser les fréquences de 472 à 479 KHz. RAC a pris acte des résultats de la consultation. Notre plaidoyer se poursuivra localement du fait que l'acceptation de la décision de la WRC12 ne s'applique pas automatiquement chez-nous.

J'aimerais rappeler à nos membres que RAC possède une bonne réputation internationale, à tel point que des « sociétés sœurs » à l'Union Internationale Radio Amateur s'adressent à nous pour du soutien et de l'expertise. Historiquement, notre réputation dépasse notre poids dans l'organisation. Nous avons l'intention de conserver cet avantage.

Le gouvernement a aussi consulté la population à propos de l'allocation de six canaux sur la bande du 60 mètres. Nous avons participé à cette consultation. Nous attendons l'approbation du ministère avant de permettre aux amateurs d'utiliser ces canaux. Dans une lettre récente du ministre Moore au président de RAC (septembre 2013), le ministre note que « les commentaires reçus durant la consultation étaient positifs et plusieurs soulignaient le rôle des radioamateurs dans des situations d'urgence et de catastrophe ». Le 60 mètres est une question de priorité pour nos membres et nous avons appris à composer avec cet enjeu sur le long terme. J'espérais et je m'attendais à ce que nous soyons autorisés à utiliser ces canaux tôt en 2013. Nous continuerons d'exercer de la pression sur le gouvernement pour obtenir ces canaux.

disaster situations". 60 metres is a matter of priority for our members and we have been managing this issue through the lengthy process. I had been hopeful and expected that we would have been granted access to these channels early in 2013. We will continue to press the government to obtain these allocations.

In late December 2012, RAC received a Request for Proposal from Industry Canada seeking to update the Amateur Radio Question Bank. This is a matter of great importance to the Amateur Radio community. We bid and were successful in winning the contract. This is a good news story for the Radio Amateurs of Canada and Industry Canada. We delivered an excellent product, on time and on budget, and were able to improve the quality of the Question Bank in both official languages.

We were consulted about our views on Canada's involvement with the International Telecommunications Union (ITU) and more recently were consulted by way of a letter from Industry Deputy Minister John Knubley to the RAC President in regards to Canada's desire to have a Canadian as Deputy Director General of the International Telecommunications Bureau, which is the international body that formulates policies regarding frequency use. The federal government requested that we support this nomination and assist as able. The Radio Amateurs of Canada will support the nomination of Dr. Bruce Gracie to this position and assist Industry Canada in any way that we have the capacity to do so.

We have already started preparing for WRC15 and will be moving forward on achieving an international allotment for 60 metres for Amateurs. This action clearly complements our domestic position.

Our Executive works quietly but efficiently to cultivate and maintain our relationship with Industry Canada where a wrong move could easily derail months or even years of hard work.

Distracted driving has been an important issue across Canada including Ontario. I received a letter from Ontario's Minister of Transportation advising the Radio Amateurs of Canada that our lobbying had the desired effect and that Ontario would extend mobile Amateur Radio use for five years. In all of Canada, only New Brunswick maintains a ban on mobile operations including Amateur Radio; all other provinces recognize the public safety and public value of Amateur Radio. Bill Unger, VE3XT and Jeffrey Stewart, VA3WXM, should be congratulated for putting a team together and lobbying key Ontario officials.

Our Foundation (facilitated through the Ottawa Community Foundation) made grants to support students and schools in pursuit of Amateur Radio objectives. We continue to seek applicants for these grants. We thank our members for making donations to the Foundation thus making this program possible.

Our new E-membership has received significant support and our Maple Leaf Membership and RAC Club Affiliations numbers continue to increase as did uptake in our Club Insurance Program. We are about to run out of space in TCA for the listing of Maple Leaf Members which is proof to anyone who would doubt the success of this program which allows Canada's Amateur Radio operators to demonstrate tangibly their support of their national association.

We have increased communications with our clubs and members by starting a process of regular regional webinar sessions. We intend to continue using webinar consultations and presentations on an ongoing basis. This technology allows two-way communication and we feel it nicely complements our actions in 2011 where we increased the frequency of communications from six to twelve times a year by adding The RAC Report, an electronic newsletter.

In 2012, we started our renewal of our electronic communications. Our website will be rebuilt during 2014 to better serve our members' needs and support our communication strategies.

Once again congratulations to our 2012 Amateur of the Year, Scott Wood, VE1QD. RAC took advantage of our presence in Dayton in 2013 to present Scott with his plaque.

À la fin de décembre 2012, RAC a reçu une demande d'Industrie Canada proposant une remise à niveau de la banque de questions des examens radioamateurs. Ceci est d'une grande importance pour la communauté radioamateur. Nous avons obtenu le contrat. C'est une bonne chose pour Radio Amateurs du Canada et Industrie Canada. Tout en respectant le temps et le budget autorisés, nous avons livré un produit d'excellente qualité. Nous avons réussi à améliorer les questionnaires dans les deux langues officielles.

Nous avons été interrogés relativement à notre point de vue concernant l'implication du Canada dans le fonctionnement de l'Union internationale des télécommunications (ITU), et plus récemment par échange de lettres entre le sous-ministre John Knubley et le président de RAC à propos de l'intention du Canada d'avoir un Canadien au poste de sous-directeur général du Bureau international des télécommunications, l'entité internationale responsable des politiques d'utilisation des fréquences. Radio Amateurs du Canada soutiendra la nomination du Dr. Bruce Gracie à ce poste et assistera Industrie Canada dans toute la mesure du possible.

Nous avons déjà débuté les préparations de la conférence WRC15, et nous poursuivrons la finalisation de l'allocation internationale du 60 mètres pour les amateurs. Ceci complète clairement la description de notre position.

Notre Conseil exécutif travaille discrètement mais avec efficacité, de manière à développer et à maintenir notre relation avec Industrie Canada, là où un geste malheureux peut facilement annuler les efforts de plusieurs mois ou même d'années.

Le dossier de la conduite inattentive a revêtu beaucoup d'importance partout au Canada incluant en Ontario. J'ai reçu une lettre du ministre des Transports de l'Ontario avisant Radio Amateurs du Canada que notre représentation a eu l'effet escompté et que l'Ontario prolongera de cinq ans l'autorisation d'utiliser un radio amateur mobile. Dans tout le Canada, seulement le Nouveau Brunswick persiste dans son intention de bannir l'utilisation de la radio mobile incluant la radio amateur; toutes les autres provinces reconnaissent la pertinence de la radio amateur pour la sécurité publique. Bill Unger, VE3XT et Jeffrey Stewart, VA3WXM, méritent nos félicitations d'avoir formé une équipe de représentants efficaces auprès des plus hauts responsables officiels de l'Ontario.

Notre fondation (soutenue par la Ottawa Community Foundation) a versé des subventions pour aider des étudiants et des écoles à la poursuite d'objectifs radioamateurs. Nous sommes toujours à la recherche de candidats pour ces subventions. Nous remercions nos membres pour leurs dons à la fondation rendant ainsi ce programme possible.

Le programme des nouveaux membres-E a reçu un soutien appréciable. Notre membership Maple Leaf et le nombre de clubs affiliés à RAC continuent d'augmenter tout comme la participation au programme d'assurance. Nous manquerons bientôt d'espace dans TCA pour y afficher tous les membres Maple Leaf; une preuve de nature à confondre ceux qui doutaient du succès de ce programme, et qui permet aux radioamateurs du Canada de démontrer leur attachement à leur association nationale.

Nous avons amélioré nos communications avec nos clubs et nos membres par un recours régulier à des sessions régionales de webinar. Nous avons l'intention de continuer de recourir à l'utilisation du webinar de façon régulière pour des consultations et des présentations. Cette technologie permet la communication dans les deux sens et nous avons le sentiment qu'il complète de belle manière nos activités de 2011 dont une consistait à augmenter le rythme de nos communications de six à douze fois par année en y ajoutant « RAC en bref » et la lettre électronique notamment.

En 2012, nous avons débuté le renouvellement de nos communications électroniques. Notre site web sera refait en 2014 pour mieux répondre aux besoins de nos membres et soutenir nos stratégies de communication.

Encore une fois, félicitations à notre amateur de l'année 2012, Scott Wood, VE1QD. RAC a profité de sa présence à Dayton en 2013 pour présenter Scott avec sa plaque.



*Let's stop to take a brief look at our history and then we will look into the future.*

During our planning session in 2010, the Board agreed to the following objectives. These goals were necessary in order to ensure the organization continued to exist. This period (2010 to the end of 2012) was identified as "Financial Recovery".

- Return of RAC to balanced budgets and solvency
- Membership stabilization

These objectives were achieved by the end of second quarter 2012.

In February 2013, the Board and Executive met again to establish the goals for our second planning cycle: 2013 to 2018. We agreed upon the following goals:

- Continue to facilitate and promote the growth of Amateur Radio and RAC
- Increase public support for Amateur Radio
- Increase political support for Amateur Radio
- Increase RAC influence on regulatory agencies (local, provincial, national and international)

We call this phase "Grow, Thrive and Influence".

In particular we agreed to do the following over the period 2013 to 2015.

- Develop publication and communication supports to clubs, Amateurs and the public, in order to grow new Amateurs, increase RAC membership and influence public and political opinion
- End "hidden subsidies": RAC to stand as a financially-viable organization
- Increase RAC resource base (grow resources)
- Be prepared to pay for mission critical functions in order to increase accountability and the quality of outcomes

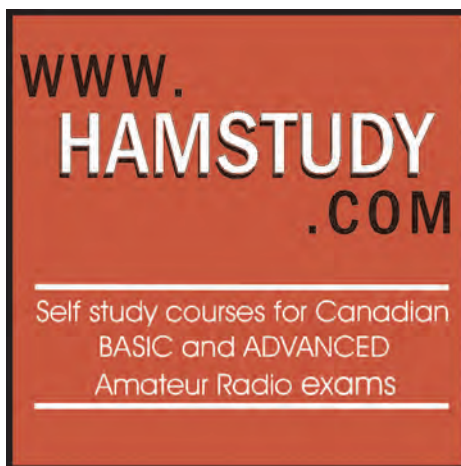
As developing publication and communication supports is our number one priority, we have bulletined for a paid Director of Communications and Fund Raising. If you are or know of someone who is interested, I would be happy to speak with you informally.

In order to facilitate our operations we are doing a review to determine whether a virtual organization would be more effective in influencing government and providing services rather than operating from a single office in Ottawa. As RAC grows its staff and as the volunteer base grows, we need to better manage ourselves. The decision to build a more regional organization requires appropriate administrative and operation supports. We need to scale up for a RAC organization of 500 volunteers (and a few staff) across Canada.

### Environmental Scan

Threats to Amateur Radio exist. Access to spectrum is not a right, it is a privilege that we must continually earn and defend. Many Amateurs believe that we own frequencies and will continue to own those frequencies forever and ever. The truth is that allocations recommended through the ITU need acceptance by Canada as a domestic allocation and what can be given, can just as easily be taken away.

The big operators are eyeing "our" spectrum, especially the higher frequencies. While spectrum can be redistributed through the current regulatory framework there are even more dramatic concepts being considered. Governments the world over need money and some, including our own, have mused about changing



*Jetons un coup d'oeil sur l'histoire. Et puis un regard sur l'avenir.*

À la session de planification de 2010, le Conseil d'administration a donné son aval aux objectifs suivants. Ces objectifs sont placés en ordre chronologique pour répondre à la séquence logique assurant la survie de l'organisation. La période (2010 jusqu'à la fin de 2012) est identifiée comme « la période de recouvrement financier ».

- Retour de RAC aux budgets équilibrés et à la solvabilité
- Stabilisation du membership

Ces objectifs furent atteints à la fin du deuxième trimestre de 2012.

En février 2013, le Conseil d'administration et l'Exécutif se sont rencontrés de nouveau pour

établir les objectifs du deuxième cycle : 2013 à 2018. Nous avons convenu de objectifs suivants :

- Continuer à faciliter la promotion du radioamateurisme et de RAC
- Accroître le support du public pour le radioamateurisme
- Accroître le soutien politique au radioamateurisme
- Augmenter l'influence de RAC sur les agences de réglementation (local, provincial, national et international)
- Nous qualifions cette phase de « Croissance, Réussite et Influence ».

De façon particulière nous avons convenu ce qui suit pour la période 2013 à 2015.

- Développer des moyens de soutenir les publications et communications des clubs, des amateurs et dans l'espace publique dans le but de recruter de nouveaux amateurs, d'accroître le membership de RAC et d'influencer l'opinion publique et politique.
- Mettre fin aux « subventions cachées »: RAC doit se comporter comme une organisation financièrement viable.
- Augmenter les ressources de RAC (faire croître les ressources)
- Se préparer à payer pour des missions critiques afin d'augmenter notre niveau de responsabilité et la qualité des résultats.

Comme développer le soutien à la publication et à la communication est notre première priorité, nous nous sommes mis à la recherche d'un directeur des communications rémunéré, aussi responsable des levées de fonds. Si vous êtes ou si vous connaissez quelqu'un qui est intéressé, je serais heureux d'en discuter avec vous de manière informelle.

Dans le but de faciliter nos opérations, nous sommes à revoir notre situation dans le but de déterminer si une organisation axée sur le virtuel serait plus efficace pour influencer le gouvernement et offrir des services plutôt que de fonctionner à partir d'un seul bureau à Ottawa. Comme le personnel de RAC grossit et que le nombre de bénévoles grandit, le besoin d'une meilleure gestion à l'interne devient nécessaire. La décision de mettre sur pied une organisation axée sur les régions implique un soutien administratif et opérationnel approprié. RAC doit prévoir une organisation de 500 bénévoles (et un nouveau personnel) pour tout le Canada.

### Regard sur notre environnement

Des dangers pour le radioamateurisme sont bien présents. L'accès au spectre n'est pas un droit – c'est un privilège que nous devons continuellement gagner et défendre. Plusieurs amateurs croient que les fréquences nous appartiennent et qu'elles seront toujours nôtres. La vérité est que les allocations recommandées par l'Union internationale des télécommunications (ITU) doivent être acceptées par le Canada à titre d'allocation domestique, et donc ce qui nous est accordé peut aussi nous être enlevé.

how spectrum is managed. Will spectrum always be a public good managed for all Canadians by the federal government or become real property to be bought and sold in an open market? Where would that leave Amateur Radio? How could we bid?

The threats to spectrum as well as antenna and mobile radio restrictions and other challenges are, at the end of the day, a function of public indifference to Amateur Radio. Regulators take their cues from politicians; politicians take their cues from the public. The good news is that there are more hams than ever and we hams are providing more community support than ever. We need to profile ourselves to the public without embarrassment or self-effacement. A key RAC role is to develop strategies to influence regulatory behaviour at all levels of government: municipally, provincially, federally and internationally. Positive public opinion is a key lever in influencing regulatory behaviour at all levels. We will never be in a position to bid hard dollars for spectrum. Influencing public opinion is likely the most effective way of influencing regulatory behaviour and will have long-term benefits for Amateur Radio.

Yes, there are more hams than ever and they are doing "traditional" ham activities as well as engaging in 21st Century experimentation. Amateur Radio is evolving; the marriage between computers and radio is thriving. Schools are launching balloons to the edge of space. Hams are building satellites. Amateurs are supporting their communities in times of crisis such as floods, tornadoes and fires and also at community events such as marathons, charity walkathons and races. There are many good news stories that will impress the public and it is critical that we get our message out.

On a more personal note, I would like to share some observations and issues that the Board and Executive have discussed; my comments are in brackets:

- 1) Outcomes in a volunteer organization are determined by the time allocated by the volunteer and the skills of that volunteer (real life)
- 2) Mission critical functions require resources to achieve accountability and appropriate/improved outcomes (resources need to grow)
- 3) Resources are still limited. However, in RAC recent history resources were actually negative; there was a real risk that each Board member (not Executive) would have to write a cheque for over \$10,000 each to cover shortfalls in the event of organizational failure, (resources are now growing, bankruptcy threat is fading into history)
- 4) Internal administrative supports are virtually absent outside of the Ottawa office (phone, mail, computer, secretarial support) (organizational outcomes will improve if we resource this and the virtual office review will touch upon this)
- 5) Members have the expectation of professional not amateur services from RAC and have no end of good ideas of what the organization should do (human nature)(more resources to generate professional outcomes)
- 6) The usual suspects do all the work (human nature)
- 7) Volunteer recruitment is poor and support to volunteers poor (alas still true and this needs fixing)
- 8) Volunteers can depart by giving you a one-line email "I am gone" (see bullet 1) (real life)
- 9) There will be someone that you can't please no matter what you do (human nature)
- 10) The past is always with us – we can remember the bad things that happened to us decades ago (human nature)

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Les grands utilisateurs de fréquences ont les yeux sur "notre" spectre, particulièrement les plus hautes fréquences. En plus de la demande spectrale qui pourrait être redistribuée selon la structure réglementaire, il y a encore plus grave à considérer. Les gouvernements mondiaux, incluant le nôtre, qui ont besoin de revenus monétaires, rêvent de changer le mode de gestion du spectre. Est-ce que le spectre sera toujours du domaine public géré pour tous les Canadiens par le gouvernement fédéral ou deviendra-t-il un bien pouvant être acheté ou vendu librement? Que restera-t-il pour la radio amateur? Comment pourrions nous faire une offre d'achat valable?

Les menaces pour le spectre tout comme la restriction pour les antennes et les radios mobiles et d'autres défis sont, en bout de ligne, fonctions de l'indifférence du public envers le

radioamateurisme. Les chargés de la réglementation écoutent les politiciens; et les politiciens écoutent le public. La bonne nouvelle est qu'il y a plus d'amateurs que jamais, et que nous, amateurs, soutenons la communauté plus que jamais. Nous devons nous faire valoir devant le public sans gêne ou fausse modestie. Un rôle central pour RAC est à l'effet de développer des stratégies pour influencer le comportement des chargés de la réglementation dans tous les gouvernements : municipaux, provinciaux, fédéral et internationaux. Une opinion publique positive est un puissant vecteur pour influencer la réglementation à tous les niveaux. Nous ne serons jamais en mesure de rivaliser sérieusement avec les « puissances financières » pour le spectre. Influencer l'opinion publique est probablement le moyen le plus efficace d'influencer les responsables de la réglementation et générer à long terme des avantages pour le radioamateurisme.

Oui, il y a plus de radioamateurs que jamais. Ils pratiquent leur hobby de façon traditionnelle tout en s'engageant dans le 21<sup>ème</sup> siècle. Le radioamateurisme évolue. Le mariage ordinateurs radio se consolide. Les écoles lancent des ballons jusqu'à la limite de l'espace. Les amateurs construisent des satellites. Ils soutiennent leur communauté en cas de catastrophes telles des inondations, des ouragans, des feux tout autant que pour des événements comme des marathons, des marches caritatives et des courses. Il y a de nombreuses bonnes nouvelles de nature à impressionner le public. Il nous est impératif de les faire connaître.

Sur un plan personnel, j'aimerais partager quelques observations et enjeux qui ont fait l'objet de discussion de la part des membres du Conseil d'administration et de l'Exécutif. Mes observations personnelles sont entre parenthèses.

- 1) Les résultats dans une organisation bénévole sont conditionnés par le temps des bénévoles et leur compétence, (la vraie vie).
- 2) Les fonctions de missions critiques requièrent des ressources particulières pour augmenter le niveau de responsabilité et la qualité et la pertinence des résultats (les ressources doivent augmenter).
- 3) Les ressources sont encore limitées. Cependant, l'histoire récente de RAC laissait voir des perspectives négatives... il y avait un risque réel que chaque membre du Conseil d'administration (pas l'Exécutif) eût dû faire un chèque de plus de 10 000 \$ pour couvrir l'insuffisance de fonds en cas de faillite de l'organisation, (les ressources sont actuellement en croissance et la menace de faillite s'estompe).
- 4) Le soutien administratif interne est virtuellement absent à l'extérieur du bureau d'Ottawa, téléphone, poste, ordinateur, secrétariat. (le rendement organisationnel s'améliorera si nous affectons les ressources nécessaires et si la mise sur pied d'un « bureau virtuel » produit l'effet escompté).
- 5) Les membres s'attendent à des services professionnels de RAC, pas amateurs. Ils n'ont pas une bonne idée de ce que l'organisation devrait faire (la nature humaine – il faut plus de ressources pour générer des extrants professionnels),





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W: www.qsl.net/ve3dss

**Our missing solar cycle** made the *New York Times* the other day. Notable in the article was that the sun has not produced a lot of spots this cycle and has stayed pretty quiet compared to the last three cycles.

In fact, we only saw a brief few days in November 2011 when the band opened on F2. At this writing, the sun is pretty spot-free, sadly.

Whether this continues into the fall of 2013 and next year is anyone's guess.

The article did, however, make reference to prior cycles that were less spotty than normal. In particular they noted that this was like 1914. So if things stay as they are, I guess our best bet for DX on 50 MHz over the next few years will in fact be Sporadic E, Auroral E and EME (moonbounce).

So don't give up on Six metres as there are many chances for DX during the summer months and in December on Es – and anytime you can see the moon, on EME. It just won't be that global DX that made Cycle 21, 22 and 23 so darn interesting.

I just wonder what Cycle 25 will be like.... hmm...

Angel, WP3R, in the control room at the Arecibo Radio Observatory.

# SIX METRES AND DOWN

## WANTED "DEAD OR ALIVE": SOLAR CYCLE 24

### A Canadian Four Metre Allocation

There has been an ongoing discussion amongst the VHF community to seek an allocation at 70 MHz for the Amateur Service. Currently, there are some experimental licences issued in the US for 4 metres and of course the band is allocated in the UK and Europe. Reception in Europe of the 4 metre WG2XPN/b in Virginia (FM07), on 70.005 MHz, beacon occurred this summer. DI2MN (Germany) in Grid JN58 and IS0AWZ (Sardinia) in Grid JM49 reported reception on July 7 over a 7,000 and 7,300 kilometre path! Also that day, the WG2XPN/b on 70.005 MHz was heard across North America on Es.

During past summers, the East Coast VE gang have worked crossband 50-70 MHz with success. Let's also not forget the crossband openings on F2 during past solar cycles either.

Let's hope we can develop a compatible allocation here in Canada that would enable further experimentation, propagation studies and public service, over the next decades, as we have quite a gap between 50 and 144 MHz.

### Under the Dish: The Arecibo Dish that is...

I found myself in KP4-land in early August with the family, and of course having two days there, how could you *not* make a pilgrimage to the Arecibo Radio Observatory, eh?!

With the help of fellow VHFer and ex-Arecibo staffer Bob Zimmerman, VE3RKZ (NP4B), I was able to connect with Angel Vazquez, WP3R, who is the Head of Telescope Operations and the RFI and Spectrum Manager at the Observatory. He was most welcoming of a fellow ham and we were able to tour the site literally from top to bottom. Truly an amazing feat of engineering to erect a 1,000-foot dish of such accuracy to support operations beyond 2 GHz!

I thought our VE3ONT operation from the Algonquin Radio Observatory with the 50 metre dish was awesome, but at 1,000 feet you can imagine the gain at 432 MHz and above.



While we can't get into all the details, there will be a full story in a later issue of TCA, but suffice it to say, it was inspiring! Consider the photo of the control room to be a teaser!

### VY0HL Works Japan

Congrats to Larry, VY0HL, for his first SSSP contact with JE1BMJ at 0018 UTC on June 15!



Larry, VY0HL, works Japan on 50 MHz SSSP.

### Summer Wrap Up

Well, I missed the last issue of TCA due to the flooding here in Toronto so it's nice to be back on track here. The bands were pretty active this summer and there are many happy Six metre men out there, with new countries and many grids!

**Here's a report from my dear friend Michel, VE2XX,** in FN07, who was Johnny on the spot for some real DX!!

"My own 6m DX season starting great on May 2 by working Dale, CE2AWW and Chris, 9Y4D, the same day.

May 4: first great luck to work multiple of South American stations on E-TEP for the first time ever for me after 8 years. PY3FF / PY3OR / CE2AWW / CE3FZ / LW6HAR / LU8MB / LU9EHF.

May 10: I got a super great opening again to South America. PY3PT / PJ4NX / LU9EHF / LU9AEA / CE2AWW / PP5XX / CE3SX / CE3RR / LU8MB / LU9HH / LU5FZ / LU5FF / XE1J / YS1AG.

June 1: Great opening in multiple directions including KP4EIT / HI3TEJ / FM5WD / YV1DIG / LU5FF / LU2DEK / CO2QU then a lot of AZ and NM state stations on double hop Es.

June 7: the Alaskan day. I worked KL7KY / KL7NO / KL7HBK and also Garth, VE8NSD.

June 13: My first EU opening 2013 and best I have ever had since I got on 50 MHz in August of 2004. From 43 QSOs made I worked 11 DXCC into 30 grids just with EU, with 4 new countries and 15 new grids. Countries worked included: CT 2 stations; DL 12 stations; EI 1 station; F 3 stations; G 1 station; I 15 stations; PA 2 stations; S5 4 stations; SP 1 station; YO 1 station; YT 1 station; New DXCC worked; YT Serbia; S57 Slovenia; YO Romania; and SP Poland.

Just a little later after this Eu opening I worked TF3ML/B, TF3SG and OX3KQ. I ended the day with 13 DXCC and 33 grids worked in just one day.

June 19 was Japan day! I worked Han san, JE1BMJ, on SSSP propagation. My first Japan station ever on 6m!

Es season are not really the best this year with fewer openings on this date (June 27) but was extremely productive for me, with five new DXCC and 40 new grids."

#### June 6 Aurora Report from John, VE7DAY:

"Last night we had an auroral opening that wouldn't quit. Signals started coming in about 00:40 and I worked W7MEM, VE3AX/7, K7YDL, K7LFY, KB7ME, N7D, VA7FC, AH6LE, W7OUU, W7CN, KE7V, VE7XF, VE7DH, K7IP, VE6TL, W7LRD, N7NM, VE7BEE, K7OFT, KF7PCL, W7EW, KE7X, W7BX, KE0CO, W7LR, K7SS, N7QOZ, W7IU, VE7CDX, VE6TA, VA6WZ and VE5DX/7. I also heard many calling with light signals and many calling them.

The opening lasted until after local midnight. It was especially nice to work several VE stations and VA6WZ was a new grid for me."

#### July 16 double hop Es opening from VE7DAY:

"It was a very interesting opening, firstly because we didn't hear anything for the longest time as the Seattle area stations worked and reported many very strong signals. VA3DX came in here very strong as did K8JA and KF6A was in for well over two hours. I was still hearing him 579 when I closed down at 07:30.

Lefty, K1TOL and I tried to make contact several times but it didn't happen. There were several stations calling me but with my high noise level I just could not complete a contact with them."

#### Summer openings from VE3KU included a Trans-Auroral E opening:

June 1, we caught an opening to Kevin, KL7KY, in BP51 at 0548 UTC, and Garth, VE8NSD, in DP20 at 0603 UTC. This was our first QSO with Garth in NWT, and completion of working all Provinces and Territories on 50 MHz here. In addition VE3KH completed WAS by working KL7KY – congrats on that eh!!

Later that day, we worked YV1DIG, and heard the LU7YS/b beacon, then worked LU2DEK in GF02 at 2046 UTC.

That day also the WG2XPN/b on 70.005 MHz was across North America on Es.

June 15 brought yet another Trans-Auroral opening with contacts to Larry, VY0HL, and TF3MP/p in Iceland.

June 29 was interesting, as we had a QSO with MM0AMW in Scotland on June 29, at 0202 with 559 signals over the 5521 km path on Trans-Auroral E, followed by a wild contact with PV8ADI in Brazil at 0305 UTC!

On the higher bands, we worked some tropo on 903 MHz with WA8RJF in EN91 and N8DJB in EN91 on 1296 on September 7.

## The VE3KU Station

I've been plugging away at my station when time permits and can report that I've successfully built up the Down East Microwave 222 and 432 MHz transverters. Both are hearing well and making about 25 Watts out per specifications.

I would note that I now know why a lot of Amateurs get Steve, N2CEI/4, to build up the boxes for them as there is a fair bit of SMT soldering to do and, for most of us guys over 35, getting those tiny things just right is a challenge as is finding them when they fall out of the tweezers onto the floor. However, if you are up to the challenge go for it eh?

Having said that, the transverters were easy to tune up and operate, with minimal test equipment. I actually used my SDR spectrum analyzer to set the local oscillators and local beacons to tweak the front ends, plus a bird wattmeter to tune the transmit side. So if you are looking for some VHF and UHF transverters that have bulletproof front ends, take a look at DEMI's website. It's chock-full of VHF/UHF goodies!

So the next step is to now integrate everything for automatic bandswitching from HF through 1296, with the K3.

Fortunately, there are a few solutions for this and I'm hoping by next June's contest that I will be able to just change bands and have all the amps and IF's and PTT lines switch over properly.

## More RTL Dongle Madness

Yes, I've become addicted to SDR's!

I've been playing with these things now for many months and it certainly has been interesting.

The latest adventure was to acquire an upconverter to translate HF to VHF. Plugging that setup into the IF output of the K3 now gives me a 2 MHz swath of the VHF spectrum (using the transverters) to watch so now we can actually see signals pop up without laying out a huge pile of \$\$ for a pan adapter.

Well that's it for now. Best wishes for the holidays and let's hope we can report more tropo DX in the next column.

– 73, Dana, VE3KU/VE3DSS

## RAC PRESIDENT'S MESSAGE TO THE AGM

– continued from page 8

11) Membership rates are uneven across the country (need strategies to tell and sell the RAC story)

12) There is always someone to tell you what you are doing wrong and offer magic wand advice (real life)

13) Hams complain about the cost of membership but spend thousands on radios. Most national societies charge \$80 or so for membership (human nature) (ARRL \$39 domestic)

14) Canadian hams continually compare RAC to ARRL (ARRL has 100 staff and four revenue streams – every other national society is jealous) (see Prime Minister Trudeau and the mouse and elephant)

15) Four hams = five opinions (real life)

16) Six hams = three clubs (real life)

17) Uneven policy development process (significantly improved but work is still required)

18) No central records of key documents (fixed)

19) Habit of deficit spending (fixed)

20) RAC Insolvent (fixed)

21) Financial information made public and discussed in TCA and The RAC Report but many people failed to grasp their meaning (human nature)

22) RAC website needs refreshing (budget established and team assembled and work is underway)

23) Communication supports required (position established, now recruiting)

24) Priorities needed defining (done in 2010 for planning cycle 1 [(2010 to 2013] and in 2013 for planning cycle 2 [2013 to 2018])

25) Directors and Officers need to get out more to meet members (some funding provided starting July 2013)

26) Directors, Executive and volunteers spend hundreds of hours a year on RAC business without recognition and while paying for the privilege (see 7)

27) New Field Organization is still under construction (volunteers wanted – see below)

28) Relationship management with Industry Canada needs constant attention (new internal RAC structure, higher profile liaison)

29) While worldwide certifications of Amateurs are up, most national societies are experiencing a loss of members – former giants such as JRRRL are struggling (I believe that we can achieve significant growth during our current planning cycle)

30) Not enough communication to members say some (we have developed new systems over the last three years but we are interested in learning what additional steps we could take.

– continued on page 12





**SECOND NOTICE TO RAC MEMBERS  
RESIDING IN THE ALBERTA/NWT/NU  
AND QUEBEC REGIONS**

**DEUXIÈME AVIS AUX MEMBRES DE RAC  
RÉSIDENTS DANS LES RÉGIONS DE :  
ALBERTA/TNO/NU ET DU QUÉBEC**

**Call for Nominations of Candidates for  
Regional Director to serve on the Board of Directors  
of Radio Amateurs of Canada Inc.**

**Appel de mises en candidatures pour le poste de  
directeur de région siégeant au conseil de direction  
de Radio Amateurs du Canada Inc.**

The Secretary of Radio Amateurs of Canada Inc. hereby solicits nominations for the positions of Director for the Regions of Alberta/NWT/NU and Quebec.

If required, elections for these positions will be held in February 2014 to take office immediately to complete the two-year term to December 31, 2015.

**Incumbents:**

**Alberta/NWT/NU:** J.T. (Mitch) Mitchell, VE6OH

**Quebec:** Sheldon Werner, VA2SH/VA6SH

**1. The Candidate:**

- ✓ must be a Full Voting Member of RAC
- ✓ must have reached the legal age of majority
- ✓ must reside in the Region for which he or she is nominated

**2. A candidate may not nominate himself/herself.**

**3. The nomination form will:**

- ✓ be printed or typed
- ✓ clearly indicate the candidate's name, call sign and RAC membership number
- ✓ clearly indicate the names, call signs, RAC membership numbers and original signatures of ten (10) or more full voting members of RAC

**4. The nominators must have reached the legal age of majority and must reside in the same Region as the candidate whom they are nominating.**

**5. Each candidate must:**

- ✓ sign the nomination form, indicating a willingness to be nominated
- ✓ include with the nomination a brief biographical sketch/CV limited to 500 words succinctly setting out his/her background and qualifications. A candidate choosing to submit a biographical sketch in both English and French languages will be allowed 500 words in each language. The biographical sketch will not include any campaign platform material.

**6. All original nominations and supporting documentation, including the biographical sketch, must be received by the Secretary of RAC at the address indicated on page 12 by 3 pm on Wednesday, January 15, 2014.**

It is suggested (but not required) that the nomination forms be sent by registered mail.

Le Secrétaire de Radio Amateurs du Canada Inc. sollicite des candidatures pour le poste de Directeur pour les Régions de Alberta/TNO/NU et le Québec.

Si nécessaire, des élections pour ces postes se tiendront en février 2014 pour occuper le poste immédiatement pour terminer le mandat de deux ans au 31 décembre 2015.

**Candidats sortants :**

**Alberta/TNO/NU :** J.T. (Mitch) Mitchell, VE6OH

**Québec :** Sheldon Werner, VA2SH/VA6SH

**1. Le candidat :**

- ✓ doit être membre en règle de RAC
- ✓ doit avoir atteint l'âge légal de la majorité
- ✓ doit résider dans la région pour laquelle il est mis en nomination

**2. Un candidat ne peut se nommer lui-même.**

**3. La formule de mise en nomination devra :**

- ✓ être dactylographiée ou imprimée
- ✓ montrer clairement le nom du candidat, son indicatif d'appel et son numéro de membre chez RAC
- ✓ montrer clairement le nom, l'indicatif d'appel, le numéro de membre RAC et les signatures originales d'au moins dix (10) membres en règle de RAC

**4. Les nominateurs doivent avoir atteint l'âge légal de la majorité et demeurer dans la région du nominé.**

**5. Chaque candidat doit :**

- ✓ signer la formule de mise en nomination, indiquant son accord d'être mis en nominé
- ✓ inclure avec la nomination une courte note biographique/CV, limitée à 500 mots, décrivant succinctement ses antécédents et ses qualifications. Un candidat qui désire soumettre sa biographie en anglais et en français se verra alloué 500 mots dans chacune de ces langues. Les notes biographiques ne devront inclure aucun élément de la plate-forme électorale.

**6. Tous les documents originaux de mise en candidature et les documents reliés, incluant la note biographique, devront être reçus par le Secrétaire de RAC à l'adresse indiquée sur la page 12 d'ici 15h00, le mercredi 15 Janvier 2014.**

Il est suggéré (mais pas obligatoire) que les documents de mise en candidature soient expédiés par courrier recommandé.

**Faxed or emailed documents will not be accepted.**

- ✓ Clearly indicate on the mailing envelope that Nomination Documents are enclosed.
- ✓ The envelope will be held unopened until after the closing deadline of January 15, 2014. After this date, the Election Committee, under the supervision of the RAC Secretary, will open all submissions, review the documentation for accuracy, completeness and validity, and then announce the results of the Call for Nominations. The decision of the Election Committee is final.
- ✓ Should a balloted election be required in any of the regions, ballots will be mailed from RAC Headquarters on or before February 14, 2014.

Nominations must be sent to the following address:

Secretary, Radio Amateurs of Canada  
440 Maple Avenue  
LaSalle, ON N9J 1P4

Clearly indicate on the envelope  
"Nomination Documents".

**Les documents expédiés par courriel ou par télécopieur ne seront pas acceptés.**

- ✓ Indiquez clairement sur l'enveloppe qu'elle contient des formules de mise en candidature.
- ✓ L'enveloppe restera scellée, jusqu'après la fermeture des mises en candidatures du 15 janvier 2014. Après cette date, le comité électoral, sous la gouverne du secrétaire, ouvrira toutes les candidatures soumises, et vérifiera la documentation quand à sa validité, son exactitude et sa complétude, et annoncera ensuite le résultat de cet appel de mises en candidatures. La décision du comité électoral sera finale.
- ✓ Si une élection était requise dans l'une des régions, les bulletins de vote seraient postés du quartier général de RAC le premier 14 février 2014 ou avant.

Les mises en candidatures doivent être envoyées à l'adresse suivante :

Le secrétaire, Radio Amateurs du Canada  
440 Maple Avenue  
LaSalle, ON N9J 1P4

Indiquer clairement sur l'enveloppe  
« Documents de mise en candidature ».

## **RAC PRESIDENT'S MESSAGE TO THE AGM – continued from page 10**

When working I was always struck that there were two things that people declared that they never had enough of – communication and training. We added The RAC Report in 2011 and are hiring a Director of Communications and Fund Raising. Other than a personnel issue (and ethical organizations do not discuss personnel issues in public) members have access to meeting minutes. We issue bulletins and some Directors issue notes to members, but for two and a half years we could not fund any Director/Executive travel to meet people)

31) People are happy to write you a memo about what they think is wrong but evaporate when the heavy lifting is required (human nature)

32) The number of affiliated clubs is increasing (we need to continue the good work)

33) RAC advocates for Amateur Radio and thus for all Amateurs but provides services to members only (why buy the cow when the milk is free?)

34) RAC is not a club; it is a national organization with a mandate to enhance Amateur Radio. Overall performance should

be measured in whether spectrum is being enhanced and defended and whether Amateur Radio is growing or shrinking.

Some of the above items may seem like complaints but they are not. I am well aware that the law of human nature has not been repealed and is not likely to be repealed anytime soon. Real progress has been made over the last few years and I have confidence in the future. If we can get this far with nothing, think of what we can do with some resources. However: I remind everyone of the obvious: good outcomes require, planning, resources and work.

### **Volunteers Wanted:**

The New Field Organization is seeking new volunteers across Canada. Please contact your local Section Manager or Doug Mercer, VO1DTM at vo1dtm@rac.ca

Each Section needs an Affiliated Club Coordinator, Public Information Officer, Technical Coordinator and a Government Liaison. Doug also needs a Secretary/ Deputy Chief Field Services Officer for the Coordinating Secretariat.

*Geoff Bawden, VE4BAW  
RAC President and Chair*

## **RAPPORT AUX MEMBRES DE RAC À L'AGM – suite de la page 8**

6) Les « habituels » sont susceptibles de faire tout le travail (la nature humaine).

7) Le recrutement des bénévoles et le soutien à leur endroit sont minimes (hélas, c'est toujours vrai; il y a besoin de changement).

8) Les bénévoles peuvent quitter en envoyant un courriel d'une ligne « je suis parti » (voir 1 – la vraie vie).

9) Il y a des gens qui ne seront jamais satisfaits, peu importe ce que vous faites (la nature humaine).

10) Le passé s'accroche à nous – on se rappelle pendant des décennies les revers que nous avons connus (la nature humaine).

11) Le rythme d'adhésion est irrégulier à travers le pays (besoin de stratégies pour faire connaître et vendre l'histoire de RAC).

12) Il y a toujours quelqu'un pour vous dire que vous agissez incorrectement et vous proposer des recettes miracles (la vraie vie).

13) Des amateurs se plaignent du coût de la carte de membre, mais dépensent des milliers de dollars par l'achat de radios. La plupart des sociétés chargent 80 \$ ou à peu près pour un membership. (la nature humaine – ARRL charge 39 \$ USD)

14) Les amateurs canadiens comparent régulièrement RAC à ARRL, (ARRL a un personnel de 100 personnes et quatre

sources de revenus – les autres sociétés nationales l'envient (voir le premier ministre Trudeau et la souris et l'éléphant)

15) Quatre amateurs = cinq opinions (la vraie vie)

16) Six amateurs = trois clubs (la vraie vie)

17) Développement de politiques inégalitaires (amélioration appréciable mais encore du travail à faire).

18) Pas de filière centrale pour les documents clés (corrigé).

19) Habitude de dépenses déficitaires (corrigé).

20) RAC insolvable (corrigé).

21) L'information financière public est diffusée dans TCA et « RAC en bref » mais plusieurs personnes n'en comprennent pas le sens ou trop peu (la nature humaine).

22) Le site web nécessite une mise à niveau (un budget est prévu, une équipe a été formée et le travail est commencé),

23) Soutien aux communications requis (plan établi, présentement en recrutement).

24) Les priorités ont besoin d'être définies (complété en 2010 pour la planification du cycle 1 (2010 à 2013), et en 2013 pour la planification du cycle 2 (2013 to 2018)).

– suite à la page 22



# ANTENNAS & TRANSMISSION LINES



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## INTRODUCTION

Parts 1 and 2 of this series presented the important aspects of window lines with emphasis on their uses for feeding antenna systems.

Part 3 now focuses on the use of these lines as radiating elements in antenna systems.

In particular, I have designed and tested a set of HF antennas that use window line to shorten the antennas as compared to a full-sized dipole without compromising too much efficiency. These shortened antennas can be used in Field Day applications or where there are space restrictions that many of us often face.

I have simulated this antenna using the 4nec2 antenna simulator at 21 MHz and then scaled the dimensions for the other HF bands. The scaling was also done for the 160 metre band.

**Note:** This article uses TCA hotlinks to provide access to enriched media from the RAC website. For more information, please go to <http://www.rac.ca/tca>.

## EXPLORING WINDOW TRANSMISSION LINES (Part 3 of 3)

After the simulation was completed I built and tested the antenna for the 40, 30 and 20 metre bands to check the validity of the simulation and scaling. The 20 metre version has been tested extensively for a period of eight months at my home QTH using an inverted V configuration.

This article gives the dimensions for the antenna wires for the above mentioned bands and also gives the scaling formula for adjusting the dimensions of the antenna for any frequency of interest in the HF and 160 metre bands.

### ANTENNA DESCRIPTION

The antenna is shown in Figure 1 above. It is a special case (see TCA hotlinks 1, 2 and 3) of a linearly loaded antenna with a total length of approximately 0.38 wavelengths. It consists of two sections of radiating 400 Ohm window line connected to a radiating wire as shown.

The antenna is centre fed with 50 Ohm coaxial cable and can be mounted horizontally or as an inverted V. The only difference between the horizontal and inverted V configurations is the resonant impedance.

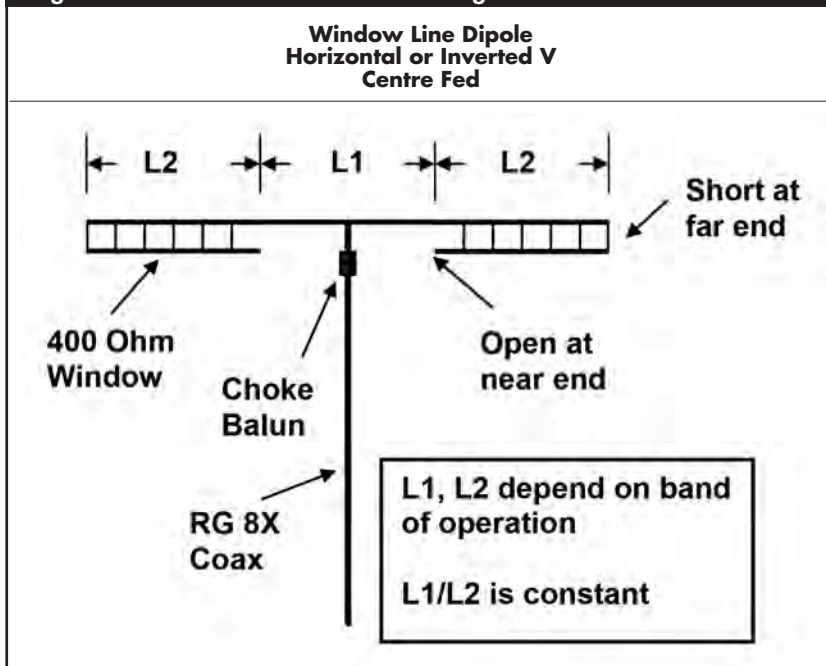
You might recall that a half-wave dipole has a radiation resistance of approximately 70 Ohms and a simple Inverted V antenna has a lower impedance and can be adjusted to 50 Ohms with the use of a suitable apex angle of the V.

The antenna described here behaves in the same manner with the impedance being lower for the inverted V configuration.

The core idea of this antenna follows from the facts that:

- The impedance of a full-sized dipole ( $L2 = \text{zero}$  in this case) = 70 Ohms

Figure 1: Window Line Antenna Drawing



- The impedance of a full linearly loaded antenna ( $L1 = 0$  in this case) = 35 Ohms.
- Hence, for some combination of  $L1$ ,  $L2$  the impedance can be adjusted to 50 Ohms. It turns out that for  $L1 \approx L2$ , the radiation resistance = 50 Ohms in free space.

This antenna configuration uses one less radiating wire, two per side, than the conventional base loaded vertical antenna that uses three wires for linear loading or the equivalent horizontal linearly loaded antenna. This makes the antenna very easy to fabricate and even easier to tune. Linear loading at the antenna ends (not the centre) makes it straightforward to adjust the input impedance to 50 Ohms.

The antenna is quite light which makes the antenna useful for portable applications. Although, the antenna was designed for an input impedance of 50 Ohms, it is easy to remove this restriction if a shorter antenna is required.

The radiation pattern is similar to the horizontal dipole and has high efficiency because it does not use loading coils or traps. Like all linearly loaded antennas, the bandwidth is less than a full-sized dipole. The measured bandwidth of the antennas is shown in the results section of the article.

## Antenna Model

Modelling linearly loaded antennas that use window lines presents several problems:

- There are no available NEC2 window line models (to the best of my knowledge) that are generally available in the literature.
- NEC2 wires must be equal or greater than a thousandth of a wavelength. Wires at the 15 metre band must therefore be at least 15 millimetres long. This is approximately the spacing between the conductors on 400 Ohm window line. A shorting wire on one end of the window line is modelled as a single wire element which sets the lowest frequency that can be used in the simulation, 21 MHz.

The modelling process used in this study is to use the parameters for Wireman 551 in TLDetails and compare these with an NEC2 model for the window line. This was accomplished by adjusting the window line capacitance so the velocity factor of the simulation agreed with TLDetails. This was required because there is no analytical formula for the capacitance of a window line as there is for coaxial cable or two-wire line in a vacuum.

## Simulation

After the window line NEC2 model was constructed, it was relatively easy to perform a standard simulation. This simulation was performed only at 21 MHz so errors did not occur in the analysis. It was done in free space since only the impedance was required and a standard scaling method for all bands could be used. Since 4nec2 has an optimizer, it was used to get the optimum values for the wire length for a resonant frequency of 21 MHz and an input impedance of 50 Ohms. The results of the simulation at 21 MHz are shown in Figure 2. As seen, the optimum length for **L1 is 1.81 metres** while the length of **L2 is 1.85 metres**.

## Scaling

Since we now have a design for 21 MHz, it is a simple process to scale the design to other frequencies. For example, for a 7 MHz antenna simply multiply all lengths by a factor of three. Since scaling is always questionable, three antenna models have been constructed to test the validity of the concept. Here is the formula for scaling the antenna to any desired frequency of operation.

$$L1 = 38.00 / \text{Frequency [MHz]}$$

$$L2 = 38.85 / \text{Frequency [MHz]}$$

Figure 2: 4nec2 Antenna Simulation

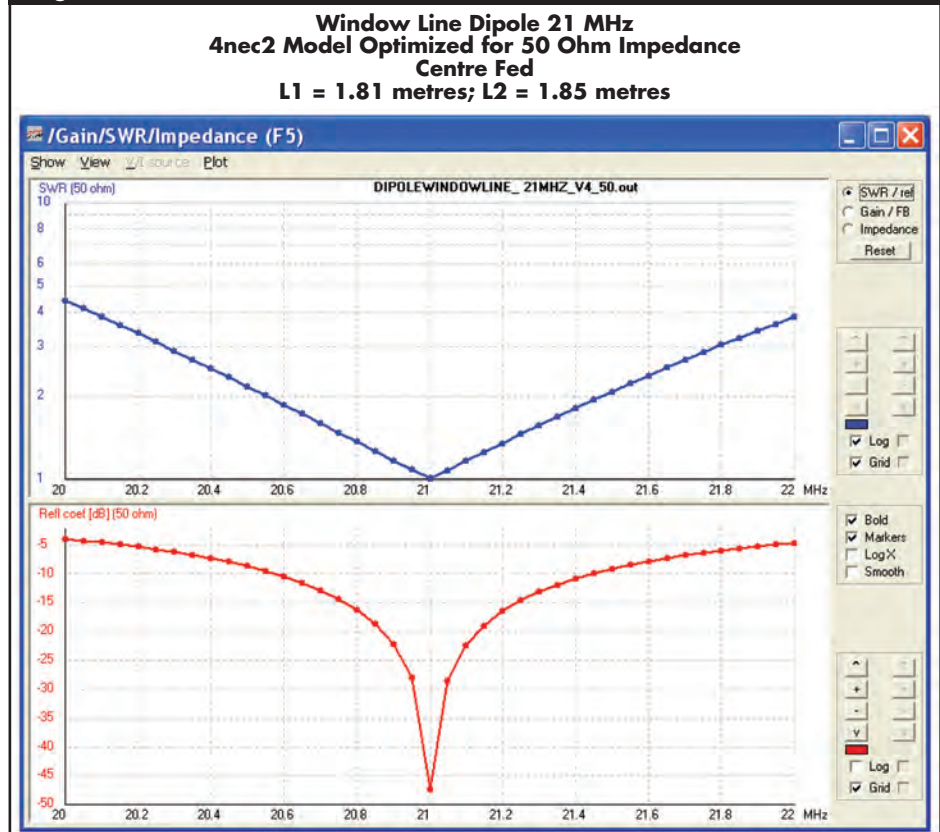
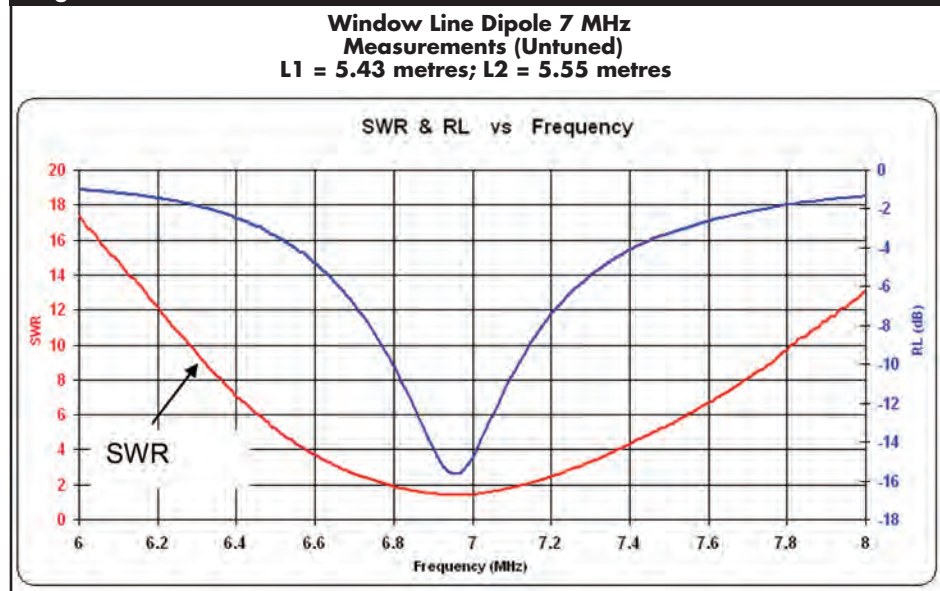


Figure 3: Antenna Measurements 7 MHz



For example, if you wish to operate at 14.10 MHz, the above formulas give the values for L1 and L2 as: L1 = 2.695 metres and L2 = 2.755 metres.

## EXPERIMENTAL RESULTS

This section presents the experimental results for three antennas that have been constructed and tested with an AIM 4170 vector impedance meter.

## The 7 MHz Antenna

The measured results for the 7 MHz antenna are shown in Figure 3. These measurements were made with the antenna connected to a section of RG-8X coaxial cable 7.5 metres long. The antenna was not tuned to show how the measured results compare with the design. The graph shows both the antenna SWR and Return Loss. Note that the highest Return Loss occurs at 6.95 MHz which is well



within an acceptable limit of error. The actual resonant frequency that you will achieve depends on the height of the antenna, the ground loss and the configuration (horizontal or inverted V). However, the antenna impedance mainly depends on the wire lengths so there should be very little tuning required. The easiest way to tune the antenna is to change the length of the centre wire, L1, and leave the window line fixed. Tuning the widow line is fine but you cannot increase its length so I tune only L1 which is easy to increase/decrease its length.

### The 10 MHz Antenna

Similar measurements were performed for the 10 MHz antenna (see Figure 4). Again, the antenna performed very well and was resonant slightly lower than the design frequency. In this case the Return Loss is greater than 20 db at the resonant frequency indicating a near ideal performance and SWR less than 1.2.

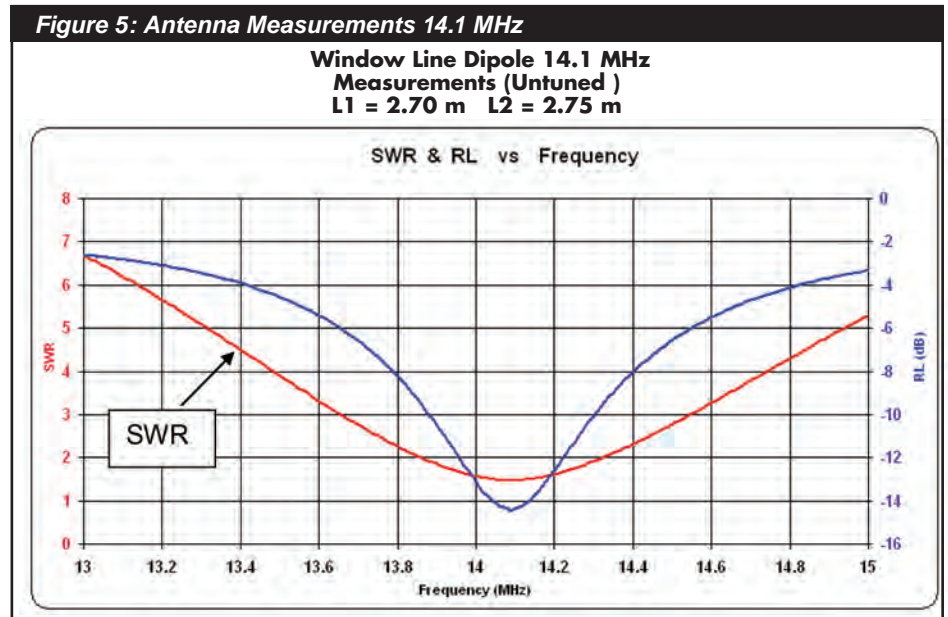
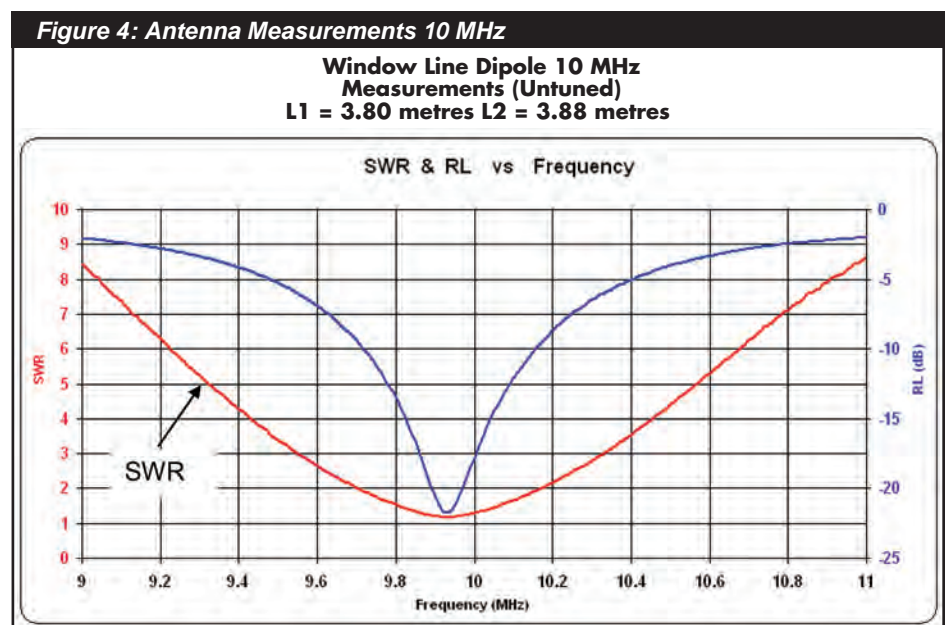
### The 14.1 MHz Antenna

The measured results for the 14.1 MHz antenna are shown in Figure 5. Notice that the centre frequency is 14.1 MHz and the SWR equals 1.6 which is slightly worse than the other antennas. This is probably caused by the fact that the antenna was configured as an inverted V with a fairly small apex angle. I have used this antenna for several months in the CW portion of the 20 metre band with the aid of an LDG automatic tuner. This mismatch translates to a transmission line loss of 0.5 dB for 12 metres of RG-8X coaxial cable used as a feedline (not counting tuner loss). Although this antenna did not require any tuning, you will probably have to tune it slightly in most environments.

### Construction

This antenna is easy to construct. The window lines are connected to a rope at the far ends of the antenna using high quality UV proof strong tie straps as shown in Figure 6 on the next page. It is important to set the tie straps with the aid of a tie strap tightening tool also seen in Figure 6. The rope should be marine grade (Dacron) braided type of approximately 3/16 inches in diameter (4.76 mm). This method works well for antennas at or greater than 7 MHz. For the lower frequencies, it might be required to use a slightly larger rope size.

The wire portion of the antenna is connected to the window line with a fibreglass circuit board piece (see Figure 6). The wire is soldered to solder lugs as shown. This portion is fixed and not adjusted for



tuning as described below. Finally, the antenna wire is connected to a Lexan insulator or other suitable material as shown in Figure 7 and the coaxial cable is soldered to the antenna wire. As usual, a choke Balun is used to minimize common mode currents on the outside of the cable. This can be accomplished nicely with a Ferrite type core or a wound loop of coaxial cable (not recommended for low power, less than 200 Watts).

In my case, I either mount the antenna on a fibreglass mast or string it between two towers. Supporting the antenna between towers is good for DX operation since the effective height of the antenna is greater than using the inverted V method using only one mast. A single mast however is very practical for portable operation.

### Tuning the Antenna

In most cases the antenna will need some tuning to set its resonant point to the desired value. One way to accomplish this task is to lengthen or shorten all elements. However, the recommended way is to change only the value of L1. This is very easy to accomplish and nicely meets the desired results. You can use the following formula to do this.

$$\Delta L1 = -8.4 * \Delta f / f_o \text{ [metres]}$$

Where:

$\Delta L$  is the required length change to L1

$\Delta f$  is the desired frequency change [MHz]

$f_o$  is the operating frequency [MHz] before tuning



For example, suppose that the resonant frequency of the antenna equals 14.0 MHz and the desired frequency of operation is 14.1 MHz ( $\Delta f = 0.1$  MHz), then L1 must be changed by  $-0.06$  metres. The element, L1, must be shortened and the window line remains fixed at its original length.

The above formula was found through simulation and is not expected to be accurate for very large values of  $\Delta f$ . Normally only one tuning iteration will be required for this antenna.

## CONCLUSIONS AND DISCUSSION

This set of three articles introduced the uses and modelling of 400 Ohm window line for transmission lines and antennas. The ideas can be extended to other line types such as 300 Ohm transmitting twin lead and open wire types. One of the main difficulties associated with window line is creating a good NEC2 model. The model that I have created is limited to frequencies greater than 21 MHz because of the small spacing between the wires of the window line. The G5RV antenna was analyzed in Part 2 of the article which included the effect of ice/snow covering on the overall loss of the system. It was also shown that window line losses increase dramatically at high frequencies due to ice/snow covering. A special type of a linearly loaded antenna was presented in this article to demonstrate the methods of using window line as radiating elements. There is not much literature on the radiating efficiency of these antennas. Some claim that they outperform loading coils while others say that they are not as good. I have not yet explored the efficiency of these antennas. However, it is reasonable to assume that they are not quite as good as a basic dipole.

## ACKNOWLEDGEMENT

The author wishes to thank Bryan, VE3ZRK, for his assistance with the fabrication of the antennas. His help led to a strong antenna that withstood high winds and a harsh Canadian winter with very few signs of any degradation or failures.

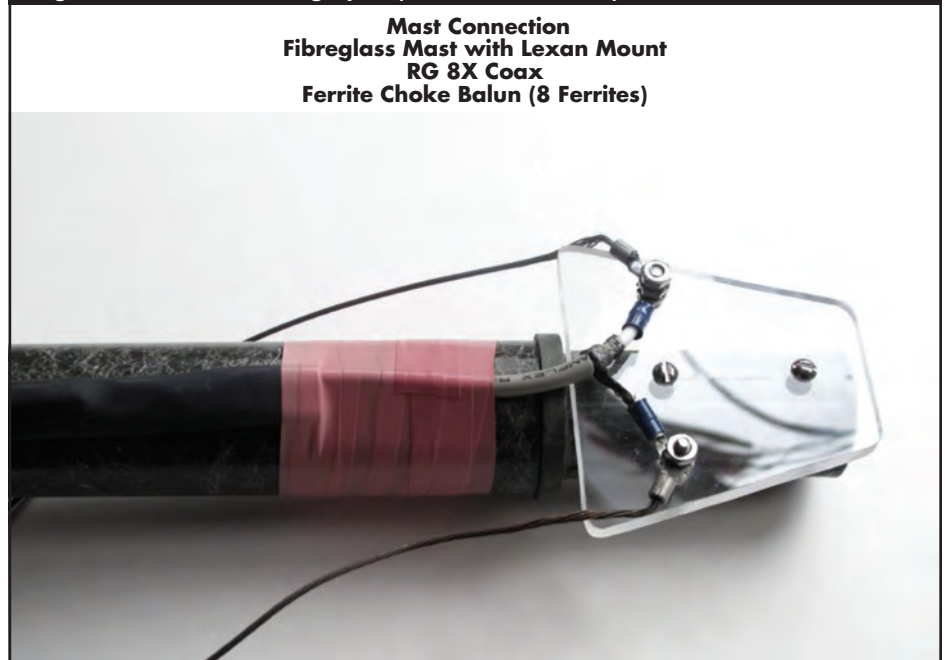
## FURTHER STUDY USING TCA HOTLINKS

Further information is provided with TCA hotlinks which are easily accessed via the RAC website. For this information, please visit <http://www.rac.ca/tca>. Hotlinks make it unnecessary to type URL addresses into your computer and provide you with calculators and other support that demonstrates the ideas presented in the articles. The following hotlinks for this article are available on the RAC website.

**Figure 6: Antenna Photographs (End Connections)**



**Figure 7: Antenna Photographs (Mast Connections)**



TCA hotlink 1: The K4VX Linear-Loaded Dipole for 7 MHz, *QST* Archives, July 2002. <http://www.arrl.org/arrl-periodicals-archive-search> (for ARRL members only)

TCA hotlink 2: Cobra Antenna with Loading Coil, N4SPP [http://www.nonstopsystems.com/radio/frank\\_radio\\_antenna\\_cobra.htm](http://www.nonstopsystems.com/radio/frank_radio_antenna_cobra.htm)

TCA hotlink 3: The Short Dipole, K5DKZ – <http://www.k5dkz.com/shdi.html>

– Until later, David, VE3KL



**Bob Eldridge, VE7BS**  
920 Erickson Road  
RR2 Pemberton, BC  
V0N 2L2  
E: ve7bs@rac.ca

## WATERPROOFING CONNECTORS

### VE3XZ writes:

"Standard practice with some cable TV systems here in Ontario is to use Vaseline-brand petroleum jelly as an aid against water intrusion & corrosion.

Here, with my 'L's', I use ordinary PL-259 / SO-239 coax connectors at each base: I apply Vaseline to the prongs of the PL-259's, and swab a bit onto the threads of the SO-239's, before mating them. I then apply a very generous coat of Silicone !! sealant all over the pair, well beyond the end of the connector & on up the coax cable...

Come Spring, when it's time to stow the antenna, I simply get an X-acto knife, make a longitudinal cut into the silicone (being careful not to cut too deep), then peel off the silicone... I've done this for some 6 years now, with nary a problem with water intrusion –and the connectors come apart just as easily as the day that I Vaseline'd them..."

**WA3MEJ warns** that it is important to use Silicone II or you will have corrosion problems.

**K6XYZ commented** that the Silicone sealant sold specifically for use in aquariums is non-toxic

# QUA – A TOPICAL DIGEST

and quite safe. GE Silicone Sealant II is a "neutral cure silicone" whereas GE Silicone Sealant is an acid or acetoxycure silicone. "Neutral Cure" silicone means no acids are released during the curing process (this information was obtained from the GE website).

## DIFFERENTIAL MODE SUPPRESSION

### W8JI writes:

"I can't understand why throwing some ferrite beads at a problem, or changing the supply, are the only two solutions. Many times, if not most times, a few .01 uF line voltage rated bypass capacitors are significantly better than a string of cores, or a winding through cores. In the first place, we can add cores over power cords or other multi-conductor cables until the cows come home, and it won't change differential mode suppression. Differential excitation can be as bad as common mode excitation, because lines are always unbalanced some small distance away from the noise source.

There was a computer about a mile or two from me, perhaps further, and it was exciting the telco and power lines in differential mode. The lines acted like transmission lines with fairly low loss, and the noise went for miles. I bought the lady a lighting protection outlet strip with internal bypass capacitors, no series beads added, and the problem vanished. There are two excitation modes that cause problems, and beads across multiple conductors don't do a thing for differential mode.

Beads also have a varying effect on common mode, because the common mode impedance of the system has to be very low in comparison to bead series impedance in order for beads (or any series impedance) to have a large effect. A high CM or DM system impedance, or an uncontrolled impedance, is what causes us to have poor results, or what makes a system require astronomical and/or impractical choking impedances.

I solved all my computer issues 15 years ago. I built a line filter box that has individual series chokes on each power mains lead, and bypasses the line source side of the lines to the safety ground and box ground. The computer side ground pin floats from the chassis by a high current RF choke, and the socket is bypassed only to the cord's safety ground on that side.

In conjunction with proper shack wiring, enclosures, and RF cables, I can use any supply or computer I like. Some line filters, by the way, are not built correctly. Some fail to address the common mode, others fail to address the differential mode. But the poorest and most unreliable system of all is the system that just throws beads at a problem."

## CUSHCRAFT R5 VERTICAL

"John" (I don't have his call) asked on the Antenna Discussion forum:

"The Manual shipped with the antenna and the PDF on the MFJ site does not list any adjustments for 20 metres. A support ticket with MFJ provided the method: 'Raise the height of BT1 to lower the frequency. This will affect 17 and 40 also.' So I need to do some arithmetic. I will assume that this is a 1/4 wave stub. My current low SWR point is 14.226 and I would like to move it to 14.072, a difference of 154k so I need to lengthen about two inches?"

**KT4YE responded:** "Move it *exactly* two inches and then measure the new frequency. If you are on 14.072, no further adjustment. If not, calculate the change in frequency; divide it by two and that will give you (roughly) the number of kHz per inch."

## ON BALUNS AND CHOKES

**K2AV held forth** at length on one of the reflectors:

"Folks want things to be simple: no long paragraphs, no big words, no long versions allowed, executive summaries only, no details. Some things actually are simple that way for useful results, if you don't cut it too fine. Other things are complex, full of traps, riddled with opportunities for bad results. The devil is in the details, and without the details you can't tell what you've got.

Transformers, chokes, auto-transformers and (true) baluns are complicated with lots of opportunities to mess them up. If you have a simple concept for those, you are probably going to be had. When you are working on those, it's a mental tiger on your workbench, not a pussycat.

The word 'balun' has been so misused it's almost worthless for a clear discussion. These days just about any blob with a coax connector on either end is called a 'balun'. And some manufacturers take full advantage of this ignorance to put some real junk out there. Other manufacturers put out tested designs with windings and core very carefully designed and tested to a specific purpose. Caveat Emptor!

Put a bifilar winding on a toroid. Depending on how you connect the winding wires, it can be a transformer with isolated windings, a common mode choke, an auto-transformer, or a 4:1 Ruthroff balun. They all behave differently in one aspect or another.

The specifics of the winding and the core material and size used will have enormous effect on the operational range and behavior of the product. Some combinations of winding and core are completely useless at a given frequency.



Other combinations of wire and core will have excessive loss for QRP use and will crack or burn at QRO. There is no way to simplify that discussion and reach factual conclusions. We just have to deal with it."

## BROADSIDE SPACING ANTENNAS

In the course of a discussion on the Topband Reflector about optimum spacing, **W8JI** wrote:

"Half-wave spacing forms two nulls at ground level, directly off the sides of the array. You have *one* null on each side at ground level. Most people fail to realize the side nulls at half wave spacing are at ground level only. It is a less than perfectly deep null at wave angles above earth level. Wider spacing, compared to 1/2 wave spacing, forms a null cone. This provides **\*\*two nulls\*\*** at ground level off each of the sides (now you double the chances of groundwave noise being in a null).

Even more important, the side null forms a cone that reaches maximum elevation off the side. This means directly off the side of an array, *wider* spacing gives a deeper null.

This is contrary to what most people assume, because they look at the null as a ground wave side problem. People tend to overlook the fact that distant signals and noise come from angles higher than zero degrees elevation. They also overlook the fact that a wider spacing provides four groundwave nulls (two on each side), instead of just two nulls (one on each side) of 1/2 wave spacing.

I can't think of a single case, besides a single groundwave noise source directly off the side, where 1/2 wave spacing would be an advantage."

## TRIMMING ELEVATED RADIALS

After a long discussion on the Topband Reflector about the best way to trim radial, **DJ2YA** wrote:

"I wouldn't attempt to tune the radials exactly to resonance, because that will be most difficult to achieve due to a number of reasons... the worst that may happen is that just one radial is exactly resonant, as it will take (almost) all the return current and diminish the effect of (horizontal) cancellation... make them all a little longer (or shorter) and tune the radiator for resonance..."

## A BAD "GROUNDING" METHOD

On the Antenna Discussion forum, **G3NOQ** writes:

"A common earthing idea is to drive an end-fed antenna from the 'live' terminal of the transmitter, hoping that the transmitter is an adequate earth – something I did

myself when I was at school, and earned WAC with it... Of course the return current goes into the house wiring which then forms part of the antenna, with a radiation pattern of its own."

## BCWARN

BCWARN is an association of Amateur radio groups sharing the common goal of building a high speed data network, capable of operating independent of commercial "Internet" providers.

One of the goals of BCWARN participating groups is to assist in connecting Emergency Operations assets (EOCs, PEP HQs, reception centres, etc) with a common, independent network.

The BCWARN network allows its users to exchange information such as email, Internet chat, remote printing, VoIP telephone and fax calls, and virtually anything else that you would use the "Internet" for, between the connected sites but without having to rely on the commercial network infrastructure.

Note, however, that most of the time, there are gateways to the "Internet" that allow traffic from BCWARN sites to communicate all over the world. However, should a major incident cause those gateways to fail, the BCWARN sites will still be able to communicate with each other and exchange their information.

You can view a map of the present BCWARN Network at: <http://www.bcwarn.net/intermapper/rf-map.html>

## ANTIQUE AIRWAVES

AntiqueAirwaves.com is a web directory (<http://www.antiqueairwaves.com/>) for finding information on collecting and on the history of vacuum tube radios, crystal radios and vintage transistor radios. There is also information about radio restoration, parts sources, vacuum tubes and tube testers, and vintage test equipment. (Thanks Radio HF Internet newsletter)

## THE VINTAGE AND MILITARY AMATEUR RADIO SOCIETY

The Vintage and Military Amateur Radio Society (VMARS) is a UK Society which exists to help and support Radio Amateurs and Shortwave Listeners who wish to restore and operate vintage military or commercial radio equipment on the Amateur bands. Its website is at: <http://www.vmars.org.uk/>

(Thanks Radio HF Internet newsletter)



## Licensed Before 1988?

QCWA invites you to join with those distinguished Amateurs licensed 25 years ago and licensed today.

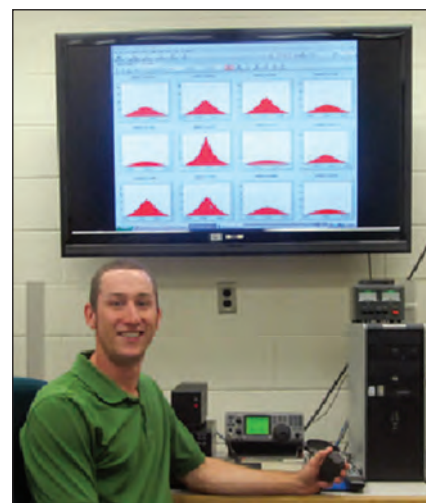
To join or renew with QCWA visit:

<http://www.qcwa.org/join-renew.php>

For more information please contact QCWA at: [execadmin@qcwa.org](mailto:execadmin@qcwa.org)



## 2013 BRIT FADER SCHOLARSHIP



The Halifax Amateur Radio Club is pleased to announce that Alex Cushley, VA3CUS, has been awarded the 2013 Brit Fader Scholarship.

Mr. Cushley is a Ph.D. candidate in the Department of Physics at the Royal Military College in Kingston Ontario. Alex received his Amateur Radio certificate – Basic with honours – in 2009, and is a member of the Kingston Amateur Radio Club. He has been involved with "High Altitude Balloon Experiments", and with setup and maintenance of the VE3RMC Ham Radio satellite ground station; he also participated in the 2012 ARES exercise in Kingston.

Alex is most interested in using Amateur Radio to support science experiments and his academic pursuits, including tracking, telemetry and downlinking of balloon and satellite data.

# MINUTES OF THE TWENTIETH ANNUAL GENERAL MEETING OF THE MEMBERS OF RADIO AMATEURS OF CANADA



# PROCÈS-VERBAL DE LA VINGTIÈME ASSEMBLÉE GÉNÉRALE ANNUELLE DES MEMBRES DE RADIO AMATEURS DU CANADA

**MERRITT HALL – ANCASTER FAIR GROUNDS  
ANCASTER, ONTARIO – OCTOBER 5, 2013**

**MERRITT HALL – ANCASTER FAIR GROUNDS  
ANCASTER, ONTARIO – 5 OCTOBRE 2013**

1. The meeting was called to order at 1:08 pm by President, Geoff Bawden, VE4BAW. He welcomed all those present at the meeting as well as all those across Canada who were at the meeting via Webinar.

2. President Bawden, VE4BAW, particularly wanted to acknowledge and thank Roger Pimm, VE3UFZ, the President of the Hamilton Amateur Radio Club, for facilitating our meeting.

3. President Bawden introduced the Board members, Executive Officers and Guests in attendance, in person or via Webinar.

These included: Director Jeff Stewart, VA3WXM; Director Bill Unger, VE3XT; Director Mitch Mitchell, VE6OH; Director Bill Gipps, VE7XS; Director Derek Hay, VE4HAY; First Vice-President Ian MacFarquhar, VE9IM; Corporate Secretary Al Masse, VE3CWP; Chief Field Services Officer Doug Mercer, VO1DTM; International Affairs Officer George Gorsline, VE3YV; Honourary Legal Counsel Marcel Mongeon, VE3DDD; Chief Information and Technology Officer Paul Burggraaf, VO1PRB; Assistant Director Stan Lechinsky, VE3TW; Frank Greene, RAC Office Administrator; Ian Snow, VA3QT, SM Ontario South; George Duffield, VE3WKJ, SM GTA; Doug Frame, VE3JDF; Pat Barrett, VE3RNH; Mike Brickell, VE3TKI, Incoming QSL Bureau; and Allan Boyd, VE3AJB, SM Ontario North.

Two XYLs were introduced as well: Julie Masse and Anne Mitchell.

3. There was a Moment of Silence given in Memory of any Silent Keys.

4. Approval of Previous Minutes. Motion by Mike Brickell, VE3TKI and seconded by Ralph Welsh, VE3RWO, to approve the minutes of the September 22, 2012 AGM held at St. Ignatius of Loyola Parish Church in Montreal, Quebec. Motion was carried.

5. President Bawden's report is provided in full as a separate article (see page 5).

6. Approval of December 31, 2012 Audited Statements. The statements are provided as a separate article in this issue of TCA (see page 21). President Bawden made special reference to our Profit & Loss Statement which shows a net profit of \$42,343 as compared to a profit of \$31,247 for the same period last year. Our Statement of Cash Flows increased from \$141,007 to \$170,978 and our Net Assets increased from a Deficit of \$12,694 to a Surplus of \$29,649. Other questions raised by those present were answered.

Motion was made by Frank Haighton, VE3FRH, seconded by Warren Zinger, VA3UG and was carried to approve as presented in the December 31, 2012 audited statements.



1. L'assemblée débute à 13h08 à l'invitation de président Geoff Bawden, VE4BAW. Il souhaite la bienvenue à tous ceux qui sont présents à l'assemblée et aux autres de partout au Canada qui y participent via le Webinar.

2. Plus particulièrement, le président Bawden, VE4BAW, remercie Roger Pimm, VE3UFZ, président du Hamilton Amateur Radio

Club, d'avoir aidé à la tenue de l'assemblée.

3. Le président Bawden fait la présentation des membres du Conseil d'administration, de l'Exécutif et des invités présents sur place ou via Webinar.

Sont inclus : Le directeur Jeff Stewart, VA3WXM; Le directeur Bill Unger, VE3XT; Le directeur Mitch Mitchell, VE6OH; Le directeur Bill Gipps, VE7XS; Le directeur Derek Hay, VE4HAY; Le premier vice-président Ian MacFarquhar, VE9IM; Le secrétaire corporatif Al Masse, VE3CWP; Le responsable en chef des services extérieurs Doug Mercer, VO1DTM; Le responsable des affaires internationales George Gorsline, VE3YV; Le conseiller juridique honoraire Marcel Mongeon, VE3DDD; Le dirigeant principal de l'Information et de la technologie agent Paul Burggraaf, VO1PRB; L'assistant directeur Stan Lechinsky, VE3TW; Frank Greene, responsable de l'administration au siège social de RAC; Ian Snow, VA3QT, SM Ontario sud; George Duffield, VE3WKJ, SM GTA; Doug Frame, VE3JDF; Pat Barrett, VE3RNH; Mike Brickell, VE3TKI, bureau des QSL entrants; et Allan Boyd, VE3AJB, SM Ontario nord.

Deux XYLs ont aussi été présentées : Julie Masse et Anne Mitchell.

3. Un moment de silence est observé en mémoire des clés silencieuses.

4. Approbation du précédent procès verbal. Une motion est présentée par Mike Brickell, VE3TKI et appuyée par Ralph Welsh, VE3RWO, à l'effet d'approuver le procès verbal de l'assemblée du 22 septembre 2012 tenue à l'église de la paroisse St-Ignace-de-Loyola à Montréal, Québec. Motion approuvée.

5. Le rapport du président Bawden est fourni au complet séparément (voir la page 5).

6. Approbation des états financiers vérifiés au 31 décembre 2012. Les états financiers sont présentés séparément dans ce bulletin (voir la page 21). Le président Bawden a fait une référence spéciale à notre état des profits et pertes lequel affiche un profit net de 42,343 \$ comparé à un de 31,247 \$ pour la même période l'année dernière. Notre liquidité est passée de 41,007 \$ à 170,978 \$ et notre équité, d'un déficit de 12,694 \$ à un surplus de 29,649 \$. On a répondu aux autres questions posées par l'assistance.



7. Appointment of Collins Barrow LLP, Ottawa, as RAC Auditors for the year ending December 31, 2013.

Given the degree of their fees, a question was raised as to do the audit every year. In reply, President Bawden advised that an Annual Audit is required by our constitution and we continually endeavour to be sure that we are getting value for our money.

Motion was made by Bryan Jay, VA3BLJ and seconded by Gordon Murray, VE3JSJ, to retain the services of Collins Barrow LLP, Ottawa for the fiscal year ending on December 31, 2013.

The motion was carried.

8. Proposed Amendment to the RAC Constitution, Section 8 – Officers, Article 10 – Removal.

President Bawden explained the need for this amendment stating that an Executive officer may have to be removed from his office due to the individual in question causing damage to RAC and which, if allowed to continue, could jeopardize the integrity and financial well being of RAC. Several questions were raised on this amendment.

Motion was made by Mitch Mitchell, VE6OH and seconded by David Wilson, VE3BBN, to authorize the proposed amendment to the RAC Constitution, Section 8 – Officers Article 10 – Removal. The motion was carried.

9. The Official Meeting was adjourned at 3:07 pm on a motion by Mitch Mitchell, VE6OH and seconded by Ian MacFarquhar, VE9IM. The motion was carried.

Special thanks are given to Jack Summers, VA3XR, of Radioworld and also to ICOM for their special door prizes.

Anne Mitchell was asked to draw the two winning tickets. These are:

- 7540496 for the IC31A – George Duffield, VE3WKJ
- 7540466 for the IC7000 – Norm Freedman, VE3CZJ

*Recorded by Al Masse, VE3CWP  
RAC Corporate Secretary  
October 5, 2013*

#### Photos:

The RAC booth was a popular spot.

Henry Jarzyna, VA3OV (Radioworld) and Geoff Bawden, VE4BAW, present the Hamfest Raffle to the AGM.

Le kiosque de RAC, un endroit populaire.

Henry Jarzyna, VA3OV (Radioworld) et Geoff Bawden, VE4BAW, présentent le tirage du hamfest à l'AGM.



Une motion faite par Fank Haighton, VE3FRH, appuyée par Warren Zinger, VA3UG est acceptée dans le but d'approuver les états financiers vérifiés du 31 décembre 2012.

7. Nomination de Collins Barrow LLP, Ottawa, comme auditeur de RAC pour l'année se terminant le 31 décembre 2013.

Devant l'importance des coûts, une question est soulevée sur la pertinence d'avoir une audition chaque année. En réponse, le président Bawden émet l'avis qu'une audition annuelle est obligatoire en vertu de notre Constitution et que nous nous assurons continuellement que le service en vaut le prix.

Une motion est présentée par Bryan Jay, VA3BLJ et appuyée par Gordon Murray, VE3JSJ, à l'effet de retenir les services de Collins Barrow LLP, Ottawa pour l'année fiscale se terminant le 31 décembre 2013. Motion adoptée.

8. Proposition d'amendement à la Constitution de RAC,

section 8 – Officers, article 10 – suppression. Le président Bawden a expliqué que cet amendement est devenu nécessaire expliquant qu'un membre de l'exécutif puisse être destitué de son poste en raison d'un comportement causant des dommages à RAC et, que si autorisé à continuer, il pourrait mettre en péril l'intégrité et la santé financière de RAC. Il y eut plusieurs questions sur l'amendement.

Une motion est présentée par Mitch Mitchell, VE6OH et appuyée par David Wilson, VE3BBN, à l'effet d'autoriser l'amendement proposé à la Constitution de RAC, section.8 – Officers, article 10 – suppression. Motion adoptée.

9. L'assemblée officielle est ajournée à 15h07 sur proposition de Mitch Mitchell, VE6OH et appuyé par Ian MacFarquhar, VE9IM. Motion adoptée.

Des remerciements particuliers sont adressés à Jack Summers, VA3XR, de Radioworld et à ICOM pour leurs prix de présence spéciaux.

On a demandé à Anne Mitchell de tirer les deux billets gagnants. Les voici:

- 7540496 pour le IC31A – George Duffield, VE3WKJ
- 7540466 pour le IC7000 – Norm Freedman, VE3CZJ

*Compte rendu par Al Masse, VE3CWP  
Secrétaire corporatif de RAC  
5 octobre 2013*

*Traduction par Claude Lalande, VE2LCF. Merci Claude!*



# RADIO AMATEURS OF CANADA INC./RADIO AMATEURS DU CANADA INC.

## Condensed Financial Statements for the year ended December 31, 2012

### Balance Sheet

December 31	2012	2011
<b>Assets</b>		
<b>Current</b>		
Cash and short term investments (Note 2)	170,978	141,007
Accounts receivable	3,287	11,213
Inventory	7,284	8,243
Prepaid expenses	7,165	5,337
	<u>188,714</u>	<u>165,800</u>
<b>Tangible capital assets (Note 3)</b>	<u>1,901</u>	<u>1,577</u>
	<u>190,615</u>	<u>167,377</u>
<b>Liabilities and Net Assets</b>		
<b>Current</b>		
Accounts payable and accrued liabilities	26,354	32,010
Government remittances payable	712	8,504
Current portion of deferred membership revenue	115,500	111,761
Current portion of deferred lease inducement	—	847
	<u>142,566</u>	<u>153,122</u>
<b>Deferred membership revenue (Note 4)</b>	<u>2,108</u>	<u>11,205</u>
<b>Deferred program revenue (Note 5)</b>	<u>16,292</u>	<u>15,744</u>
	<u>160,966</u>	<u>180,071</u>
<b>Net assets deficiency</b>		
Internally restricted for investment in capital assets	1,901	1,577
Unrestricted	27,748	(14,271)
	<u>29,649</u>	<u>(12,694)</u>
	<u>190,615</u>	<u>167,377</u>

### Statement of Changes in Net Assets

For the year ended December 31	2012	2011
	<b>Net</b>	<b>Net</b>
	<b>Assets</b>	<b>Assets</b>
	<b>Deficiency</b>	<b>Deficiency</b>
<b>Balance</b> , beginning of year	(12,694)	(43,941)
<b>Excess (deficiency) of revenue over expenses for the year</b>	<u>42,343</u>	<u>31,247</u>
<b>Balance</b> , end of year	<u>29,649</u>	<u>(12,694)</u>

### Statement of Operations

For the year ended December 31	2012	2011
<b>Revenue</b>		
Sales	6,724	12,512
Investment income	944	1,067
Membership	220,034	198,123
Magazine advertising	16,783	23,666
Other income	41,237	36,568
	<u>285,722</u>	<u>271,936</u>
<b>Expenses</b>		
Amortization of tangible capital assets	848	1,028
Bad debts	3,035	853
Bank charges, merchant fees and interest	8,292	6,978
Cost of sales and royalties	5,557	11,472
Dues and memberships	9,540	4,091
Equipment leases and charges	4,077	5,260
Executive and Directors	357	—
Insurance	31,491	31,052
Magazine production	75,340	83,283
Office	14,885	14,439
Professional fees	6,900	9,625
QSL bureaus	4,788	7,695
Rent	18,020	18,020
Telephone	2,214	1,570
Wages and benefits	58,035	45,323
	<u>243,379</u>	<u>240,689</u>
<b>Excess of revenue over expenses for the year</b>	<u>42,343</u>	<u>31,247</u>

### Statement of Cash Flows

For the year ended December 31	2012	2011
<b>Cash flows from operating activities</b>		
Excess of revenue over expenses for the year	42,343	31,247
Adjustments for		
Amortization of capital assets	848	1,028
Amortization of deferred lease inducement	(847)	(2,033)
	<u>42,344</u>	<u>30,242</u>
<b>Changes in non-cash working capital items</b>		
Accounts receivable	7,926	(3,099)
Inventory	959	7,897
Prepaid expenses	(1,828)	(3,925)
Accounts payable and accrued liabilities	(5,656)	(1,976)
Government remittances payable	(7,792)	8,504
	<u>35,953</u>	<u>37,643</u>
<b>Cash flows from investing activities</b>		
Capital asset additions	(1,172)	(1,250)
<b>Cash flows from financing activities</b>		
Net increase in deferred membership revenue	(5,358)	15,030
Net increase in deferred program revenue	548	759
	<u>(4,810)</u>	<u>15,789</u>
<b>Increase in cash during the year</b>	<u>29,971</u>	<u>52,182</u>
<b>Cash and short-term investments</b> , beginning of year	<u>141,007</u>	<u>88,825</u>
<b>Cash and short-term investments</b> , end of year	<u>170,978</u>	<u>141,007</u>

#### 1. Impact of the Change in the Basis of Accounting

The association has elected to apply the Canadian accounting standards for not for profit organizations of Part III of the CICA Accounting Handbook. These financial statements are the first financial statements for which the association has applied Canadian generally accepted accounting standards for not for profit organizations, hereafter referred to as "ASNPO".

The financial statements for the year ended December 31, 2012 were prepared in accordance with ASNPO and provisions set out in FIRST TIME ADOPTION, Section 1501, for first time adopters of this basis of accounting.

The association has not elected to use any of the exemptions relating to the initial application of ASNPO under Section 1501. The adoption of ASNPO did not result in any changes to net assets at the date of transition (January 1, 2011) and the previously issued financial statements for the year ended December 31, 2011 except for the reclassification of government remittances payable on the balance sheet. As a result, no reconciliations were prepared.

#### 2. Cash and Short-Term Investments

The association's bank accounts are held at one chartered bank and earn nominal interest. The GIC investment is held at one chartered bank and is recorded at cost plus accrued interest, earns interest at 1.55% per annum, is non redeemable and will mature on January 20, 2014. The association has a maximum credit facility of \$15,000 which was unused at year end.

#### 3. Tangible Capital Assets

	December 31		2012		2011	
	Cost	Accumulated Amortization	Net Book Value	Cost	Accumulated Amortization	Net Book Value
Office furniture	3,206	2,332	874	3,206	2,082	1,124
Office machines	8,964	8,316	648	8,244	8,009	235
Computer equipment	1,756	1,377	379	1,303	1,085	218
	<u>13,926</u>	<u>12,025</u>	<u>1,901</u>	<u>12,753</u>	<u>11,176</u>	<u>1,577</u>

#### 4. Deferred Membership Revenue

Deferred membership revenue represents memberships received during the current year or in prior years that relate to future years. Changes in deferred membership revenue are as follows:

	2012	2011
Balance, beginning of year	122,996	107,936
Amounts received during the year	214,676	213,153
Recognized as membership revenue during the year	(220,034)	(198,123)
Balance, end of year	117,608	122,966
Less current portion	115,500	111,761
Long-term portion	2,108	11,205



## 5. Deferred Program Revenue

Deferred program revenue represents donations received to be used exclusively for the ARES Program and Youth Education Program. Revenue is to be recognized in the year that related expenses are incurred. Changes in deferred program revenue are as follows:

	ARES Program	Youth Education Program	2012 Total	2011 Total
Balance, beginning of year	7,687	8,057	15,744	14,985
Amounts received during the year	328	695	1,023	1,234
Amounts recognized as revenue during the year	(143)	(332)	(475)	(475)
Balance, end of year	7,872	8,420	16,292	15,744

## 6. Commitments

### Leases

The association has a lease for its office premises for \$18,020 per year plus taxes until expiry on May 31, 2015, inclusive of common costs and utilities.

The aggregate lease payments for the unexpired term of the leases are as follows:

2013	18,020
2014	18,020
2015	7,508

### Life Memberships

Radio Amateurs of Canada Inc. is the product of the dissolution of two not for profit corporations, Canadian Amateur Radio Federation Inc., and Canadian Radio Relay League Inc. The association recognizes an ongoing commitment to provide membership services (full voting or associate) to persons who held "life status in the association" of the dissolved corporations. This life member liability does not appear as a dollar value on the financial statements, as per the policy decision adopted by the Board of Directors in September 1993.

## 7. Risks and Concentrations

The association is exposed to various risks through its financial instruments. The following analysis provides a measure of the association's risk exposure and concentrations as at December 31, 2012.

### Credit risk

Credit risk is the risk that one party to a financial instrument will cause a financial loss for the other party by failing to discharge an obligation. The association is exposed to this credit risk mainly in respect of its accounts receivable.

### Liquidity risk

Liquidity risk is the risk that the association will encounter difficulty in meeting obligations associated with financial liabilities. The association is exposed to this risk mainly in respect of its accounts payable and accrued liabilities and government remittances payable.

### Market risk

Market risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market prices. Market risk comprises three types of risk: currency risk, interest rate risk, and other price risk. The association is only exposed to interest rate risk.

### Interest rate risk

Interest rate risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market interest rates. The association is exposed to interest rate risk on its fixed interest financial instruments.

The condensed financial statements and notes have been extracted from the Audited Financial Statements.

Copies of the 2012 report of the Auditors, Collins Barrow Ottawa LLP and complete audited financial statements are available from RAC Headquarters.

Please send 9x12 SASE to:

Radio Amateurs of Canada  
720 Belfast Road  
Suite 217  
Ottawa, ON K1G 0Z5



## RAPPORT AUX MEMBRES DE RAC À L'AGM – suite de la page 12

25) Les directeurs doivent sortir davantage pour rencontrer les membres (quelques uns ont débuté en juillet 2013)

26) Les directeurs, l'Exécutif et les bénévoles travaillent des centaines d'heures par année pour RAC sans reconnaissance et paient pour leur prestation (voir 7)

27) La nouvelle Organisation sur le terrain est toujours en voie de formation (bénévoles demandés – voir ci-dessous).

28) Les relations avec Industrie Canada nécessitent une constante attention (nouvelle structure interne de RAC, liaison de plus haut niveau).

29) Pendant que les certifications radioamateurs à l'échelle mondiale sont à la hausse, la plupart des sociétés nationales font face à une diminution de leurs membres – des anciens géants tel que JRRL « étouffent » ! (Je crois que nous pouvons réaliser une croissance appréciable durant notre cycle de planification).

30) Pas assez de communications avec les membres disent certains (nous avons développé de nouveaux systèmes au cours des trois dernières années, mais nous sommes ouverts à toutes nouvelles mesures. En travaillant j'ai toujours été frappé par deux choses à l'effet que bien des gens déclarent qu'il n'ont jamais assez de communication et de formation. Pourtant nous avons ajouté « RAC en bref » en 2011 et embauché un directeur des communications et responsable des levées de fonds. Au delà de mon point de vue personnel (l'éthique des organisations ne permet pas la discussion des affaires personnelles en public) les membres ont accès aux procès verbaux des réunions. Nous émettons des bulletins et, des directeurs, des notes aux membres, mais depuis deux ans et demi nous ne pouvons trouver aucun directeur/membre de l'exécutif voyager pour rencontrer des personnes).

31) Les gens aiment écrire des mémos à propos de ce qu'ils estiment incorrect mais ne sont plus là quand le temps vient d'agir (la nature humaine).

32) Le nombre de clubs affiliés augmente (nous devons continuer notre bon travail)

33) RAC défend le radioamateurisme donc tous les radioamateurs, mais ne procure des services qu'aux membres seulement (pourquoi acheter la vache quand le lait est gratuit !).

34) RAC n'est pas un club; c'est une organisation nationale dont le mandat est de renforcer le radioamateurisme. La performance globale devrait être jugée à partir des résultats à protéger et à renforcer le spectre et à faire avancer la radio amateur.

Plusieurs des items ci-dessus peuvent ressembler à des doléances... ils ne le sont pas. Je suis bien conscient que la nature humaine ne change pas et ne changera pas de sitôt. De vrais progrès ont été réalisés depuis les dernières années et j'ai confiance dans l'avenir. Si nous avons pu nous rendre si loin sans moyen, pensez à ce que nous pourrions faire avec des ressources. D'autre part, je rappelle à chacun ce qui est pourtant évident : les bons résultats demandent de la planification, des ressources et du travail.

### Bénévoles recherchés

La nouvelle Organisation extérieure sur le terrain est à la recherche de nouveaux bénévoles partout au Canada. Communiquez avec votre gérant de section local ou avec Doug Mercer VO1DTM at VO1DTM@rac.ca

Chaque section a besoin d'un coordonnateur de club affilié, d'un responsable de l'information publique, d'un coordonnateur technique et d'un responsable de la liaison avec les gouvernements. Doug a aussi besoin d'un secrétaire/assistant responsable des services extérieurs sur le terrain pour la coordination avec le secrétariat.

Geoff Bawden, VE4BAW – RAC Président-directeur général

– Traduction par Claude Lalande, VE2LCF

# A QUARTER-WAVE SLOPER FOR 40 TO 160 METRES

Chris Kunze, DK6ED

## INTRODUCTION

My antenna system for the upper Amateur bands consists of a six-element beam up 35 feet on an aluminum tower. Due to the size of the beam, the tower needs three guy wires. Why not use these wires as an antenna for the lower bands, keeping the wires isolated from the tower and from the ground? Since they are sloping down from the top I decided to use them as slopers. From the point of high frequency technology this is the best solution possible, avoiding interaction of grounded guy wires and radiation from the antenna system.

Generally, slopers are half-wave dipoles fixed to a single support, bent towards ground, providing vertical and horizontal polarization.<sup>1</sup> This gives you a good add-on for the lower bands in addition to your beam. Due to their radiation characteristics slopers could be used for local but also for DX contacts. You can expect some gain into the direction the wire is tilted towards. The radiation angle is a little higher than what you can expect from a vertical. There were also proposals by D. Pietraszewski, K1WA, for improved directivity by using a set of slopers behind the radiator acting as reflectors.<sup>2</sup>

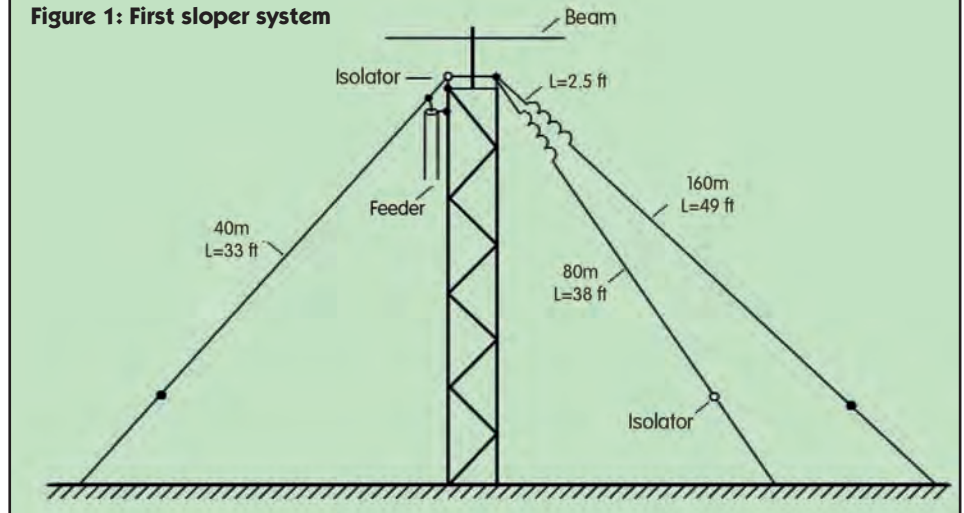
Much research has been done on the slant angle of the wire from the mast to the ground. Despite this, L. B. Cebik, W4RNL, concluded:

*"In the end, no sloper is a textbook case. Rather, each one is an experiment that combines differing values for each of the many variables. The sloper builder can only make his best estimate and then proceed by operating tests and measurements to find, within the real limitations of the installation site and available materials, the adjustments that yield as close as possible to optimal operation."*<sup>3</sup>

With this in mind, one should start with an angle of 30°, or what ever is possible due to structural conditions, as the sloper is still the guy wire for the tower. The good news is that it works anyway, even if it is still not at an optimum.

Looking at the height of the support needed for slopers on the lower bands, half-wave slopers are much too long for my tower so I took a closer look at half slopers. In this case the inner lead of the coax feedline is connected to a quarter-wave piece of wire. The second half of

Figure 1: First sloper system



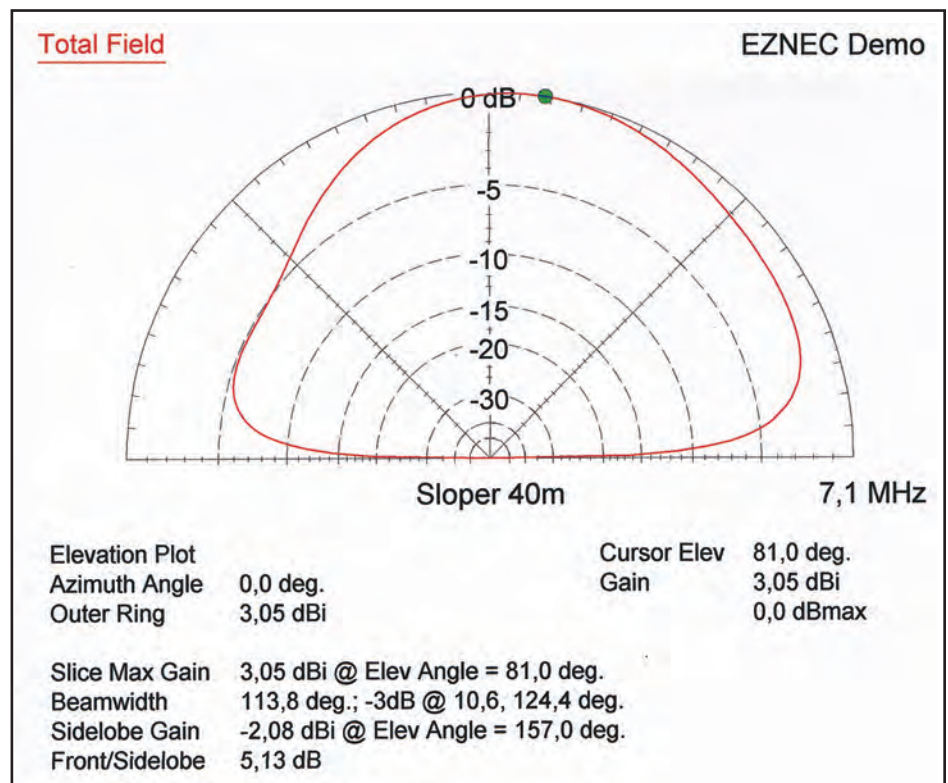
the dipole – normally connected to the screening of the coax line – is replaced by the metal structure of the tower so the tower becomes an operating part of the system. If this support is about a quarter of the wavelength used, this solution gives you about the same performance of what you can expect from the full sloper.

The height of my tower of about 35 feet gave me a perfect system for the 40m band. But how about 80m and 160m? Of course you can resonate a sloper using a coil at the feedpoint, but in this case you might face the frustration mentioned in *The ARRL Antenna Book*.<sup>4</sup>

You won't get a reasonable SWR on these bands. The reason is the second half of the dipole replaced by the tower. If the tower gets too small, you need radials attached to the base or you need a beam on top acting as a counterpoise to ground.

## FIRST SLOPER SYSTEM

My first half sloper system consisted of three single wires for 40m, 80m and 160m. It was fed at its highest point by a coax line. The inner lead was connected to the sloping wires, the screen of the coax was connected to the tower at the upper end and at the base.

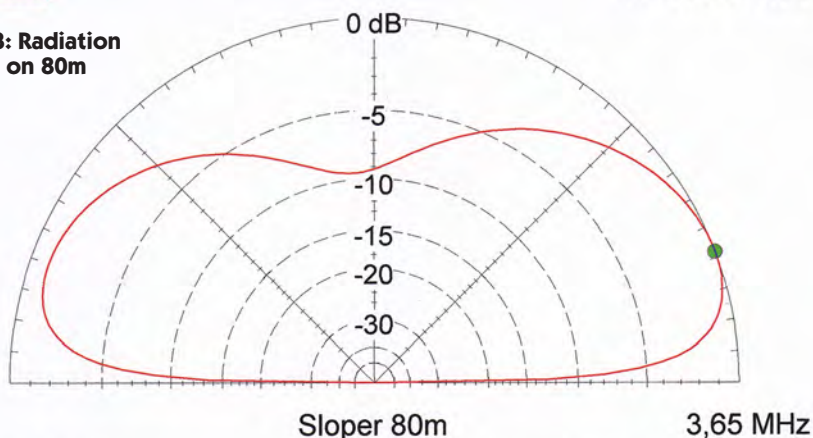




## Total Field

EZNEC Demo

Figure 3: Radiation pattern on 80m



Elevation Plot  
Azimuth Angle 0,0 deg.  
Outer Ring 1,64 dBi

Cursor Elev 21,0 deg.  
Gain 1,64 dBi  
0,0 dBmax

Slice Max Gain 1,64 dBi @ Elev Angle = 21,0 deg.  
Beamwidth 50,0 deg.; -3dB @ 5,2, 55,2 deg.  
Sidelobe Gain 0,75 dBi @ Elev Angle = 160,0 deg.  
Front/Sidelobe 0,89 dB

## THE RESULT

I was really surprised by the excellent results working DX stations from all continents. However, some directions were still hard to reach so I decided to simulate the radiation pattern with the help of EZNEC. The results are shown in Figures 2, 3 and 4. You can see directivity on 40m but almost disappearing on 80m and 160m. This was also proven by a local test which resulted in a front-to-back ratio of 15 dB on 40m and still 10 dB on 80m. As a result I then decided to divide the system into two sections. One section consists of a radiator for 40m, 80m and 160m southbound. The other one consists of two slopers for 40m and 80m northbound. Due to the reduced directivity on 160m, I use only one sloper for this band as you can see from Figure 5 on the next page.

But in any case, also on 80 and 160m, I get a significantly flat radiation pattern so all the slopers are good DX antennas.

## CONSTRUCTION

The only challenge is in making the coils. They can be part of the guying system, but then they must be made in a reinforced design to stand the drag. You can take the components from trap dipoles. The other solution is just to insert an isolator in each of the guy wires and to bridge both sides by the coil. The decision depends most on the tower being used. The coils are wound on two-inch PVC pipe. For 80m, you need 23 turns of #13 AWG copper wire spaced by a wire of same dimensions removed later. For 160m, you need 59 turns of #15 AWG isolated copper wire without spacing. For your own calculations you can refer to Figure 5 for the inductivity of the coils. For the first solution I decided to make the coil part of the guying system (see Figure 6). The components are replacement parts for a W3DZZ trap.

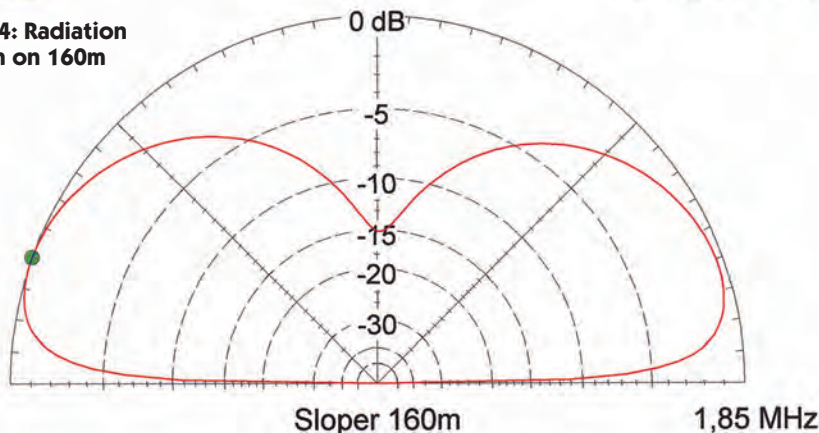
Just below the beam you see the feedpoint of the two sloper systems with the two coax lines heading down to the selector for the directions (see Figure 7). Since I only have three guy wires, I hung one of the 40m slopers down 10 inches from the 80m sloper.

Aligning the system may sound difficult as you do not want to cut the guy wires. At the lower end of the sloper I just made a loop for the insulator, using two clamps to mechanically fix the wire. The rest of the wire is bent back and fixed by a third clamp. You can easily align the length of the sloper by resizing the loop. Details can be seen in Figure 8.

## Total Field

EZNEC Demo

Figure 4: Radiation pattern on 160m



Elevation Plot  
Azimuth Angle 0,0 deg.  
Outer Ring 0,86 dBi

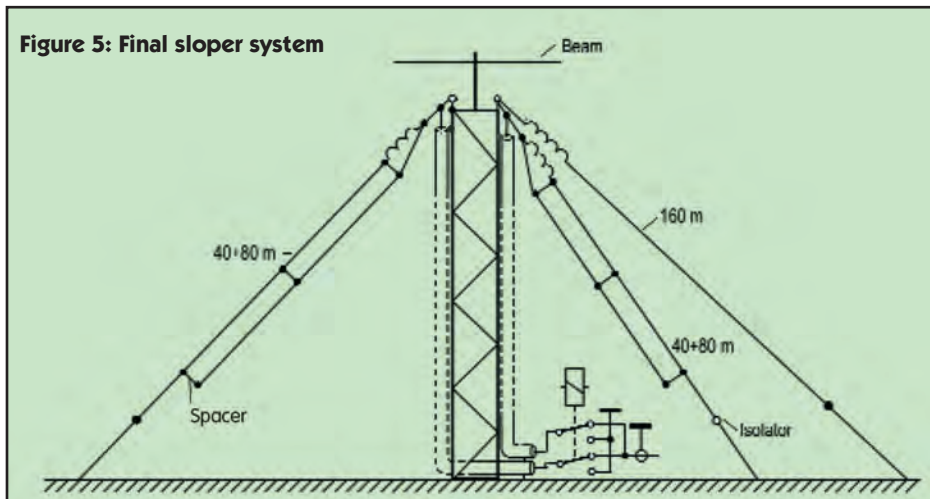
Cursor Elev 160,0 deg.  
Gain 0,86 dBi  
0,0 dBmax

Slice Max Gain 0,86 dBi @ Elev Angle = 160,0 deg.  
Beamwidth 48,5 deg.; -3dB @ 127,4, 175,9 deg.  
Sidelobe Gain 0,53 dBi @ Elev Angle = 19,0 deg.  
Front/Sidelobe 0,33 dB

So on 40m, I could use a full quarter-wave wire but, due to the decent height of the tower on 80m and 160m, the system had to be extended by coils. On the lower bands the six-element beam on top acts as a top head capacitor. In this case the beam was a must, otherwise I could not resonate the sloper on 80m and 160m as I did not want to install a major grounding system.

My next question was where to locate the coils on the sloping wire. For efficiency, the coils should be placed at a certain distance from the feedpoint, but you lose bandwidth this way. This was the reason I chose to keep the coils close to the feedpoint. Figure 1 on the previous page shows the first design.

**Figure 5: Final sloper system**



On 40m, the system is very easy to resonate and I can get a good SWR on the whole band. On 80m, I can cover up to 300 kHz within an SWR of less than 2.5. For best performance you can also decide on a 100 kHz section in the CW or phone section of the band. You can also make the same decision in choosing the top band section. SWR measured on my system can be taken from Figure 9. The resonance of the system is quite broad compared to dipoles and verticals and this depends mostly on the size of the beam on top, acting as a top head capacitor. Even for 30m you can hang another sloper, but it gets harder to align when it comes to four resonances in one section. It would be better to leave it at three bands, but one of them could be 30m.

Please keep in mind that no sloper is a textbook case so everything must be long enough for realignment!

## CLOSING COMMENTS

Based on my experience, there are some additional important facts to mention.

Since the feedpoint of the system is on top of the tower, you cannot use your antenna analyzer or grid dip meter at the base for the aligning procedure. You only find the same conditions on the coax feeder after a distance of  $l = \lambda/2 v$ .

In this equation,  $v$  stands for the velocity factor of the cable used.

So for example, if you use RG2123 for the feeder for the 40m band it gets  $300 \times 0.66 / (7.1 \times 2) = 13.95$  metres or 45.5 feet. It is only at this point that you get correct data for the 40m section!

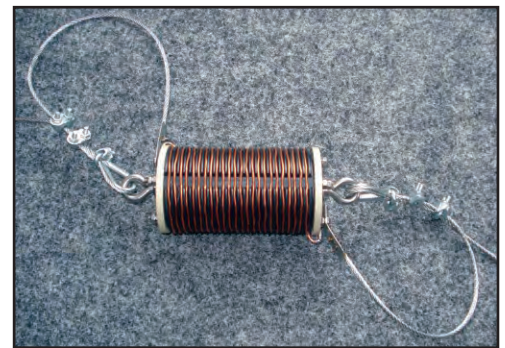
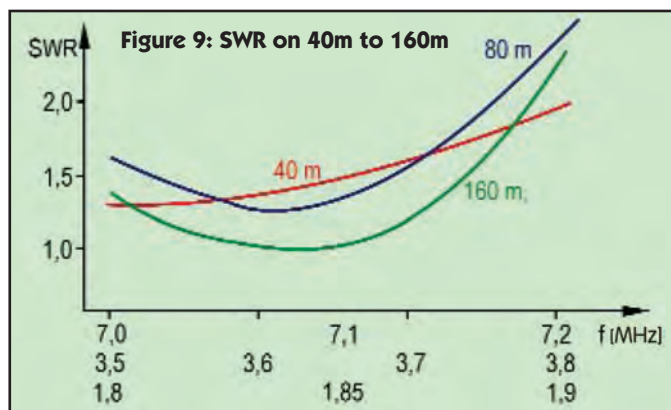
With some beam systems, a double boom is used as a feedline for the driven elements. This boom gets isolated from the tower and so the boom does not work as a top head capacitor. In this case you have difficulties resonating your slopers on 80m and 160m except when you use a convenient RF ground system with a number of radials on the ground.

When your antenna system is getting older you face corrosion in the rotator and its mounting brackets, so the resistance between the beam and the tower is getting higher. The beam will not be a perfect top head capacitor any more, so you need to bridge the rotator. This can be done by an earthing strap or any other kind of thick flexible wire.

Using this system on the lower bands, the number of countries worked increased significantly. Slopers systems are excellent low angle radiators. Of course on 160m such a short antenna is a major compromise, but at least all continents were worked on this band also.

To summarize, you get double use from your guy wires and you add good DX signals on the lower bands to your yagi system – even when you only have limited space available.

Good luck with your DX.



**Figure 6: 80m coil as part of the guy wire**



**Figure 7: Feedpoint of the final system**



**Figure 8: Aligning resonance at the end of a sloper**

## REFERENCES

- <sup>1</sup> R Dean Straw, N6BV, *The ARRL Antenna Book*, 21st edition, American Radio Relay League Inc (2007), pp. 6-44
- <sup>2</sup> R Dean Straw, N6BV, *The ARRL Antenna Book*, 21st edition, American Radio Relay League Inc (2007), pp. 6-48
- <sup>3</sup> L. B. Cebik, W4RNL: *The Slippery Slopers Argument*, <http://w4rnl.net46.net/sloper.html>
- <sup>4</sup> R Dean Straw, N6BV, *The ARRL Antenna Book*, 21st edition, American Radio Relay League Inc (2007), pp. 6-47

Christoph Kunze, DK6ED, born in 1956, licensed since 1972, 5-BDXCC 1979, DXCC#1 Honour Roll 2002, structural engineer and doctorate in environment engineering, officer-in-charge in a German municipal fire brigade and also busy in development aid.





## RAC MAPLE LEAF OPERATOR MEMBERSHIP ADHÉSION À "OPÉRATEURS MAPLE LEAF" DE RAC



*Exclusive RAC membership*



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Trevor Arkell, VE3QXR  
Adam Aultman, VA3AUL  
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Rick Danby, VE3BK  
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D Howard Dickson, VE1DHD  
George S Duffield, VE3WKJ  
Tim Ellam, VE6SH  
Darayus J Engineer, VA3AHI  
Edward Evanko, VE4EDE  
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G Bruce Hollett, VE1MLW  
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Joseph Hopkins, VE7BYF  
David Hopkinson, VA7FTW  
Gabor Horvath, VE7DXG  
Mark Alexander Humenyk, VE3HMK  
A Graham Ide, VE3BYT  
Lorne S Jackson, VE3CXT  
Brian Janzen, VE7CTH  
Aaren Jensen, VA7AEJ  
Gordon Jewsbury, VE4OK  
Dave Johnson, VE7VR  
Walter D Johnston, VE3GE  
Sam Jones, VE3LCK  
Beckett Jubb, VE6JUB  
Janet Jubb, VE6VED  
WJ Karle, VE4KZ  
Eric Kehler, VE7EGK  
Thomas V Kennedy, VA3TVK  
E Kenward, VE7BYK  
Stephen Kern, VE7HSK  
Stephen Kerridge, VE9HZ  
Kelly Kienleitner, VE7KQW  
Melvin Killens, VE3MLK  
Robert Neil King, VA7DX  
David Kingsland, VE3MDX  
Bill Kirby, VO1BB  
David Klatt, VE5GN  
Walter Kohler, VE7SM  
Boris W Kohut, VE4BG  
Gordon R Kosmenko, VE6SV  
Jerry P Krayco, VE7NX  
David LaHay, VE7FVW  
Benoit Laprade, VE2LSF  
Harvey AA Larabee, VA3LHA  
Doug Leach, VE3XK  
John C Lediet, VE3FVC  
Syd Lennox, VE3CQO  
Stan Leschinsky, VE3TW  
Allan E Lett, VE3TYT  
Joel Levis, VE3CJJ  
David Liddell, VE7QR  
John Kingsford Lockwood, VE9KC  
Gene R Lutes, VE7IMP  
Rand Lutman, VE7HRA  
Glenn MacDonell, VE3XRA  
Ian MacFarquhar, VE9IM  
John MacKay, VE7EEX  
R K Mackenzie, VA3RKM

## RAC CORPORATE MEMBERS / ADHÉSION À CORPORATIF DE RAC



continued / continué ...

Neil Macklem, VE3SST  
 Mark Magner, VE3CT  
 Pierre Mainville, VA3PM  
 Alan Mallett, VA7AWM  
 Eric G Manning, VA7DZ  
 Tom Martens, VE6TRM  
 Greg Mason, VE4AMN  
 Gabriel Mazzeo, VA3CWT  
 Philip Alexander McBride, VA3QR  
 Don McCallan, VA3GFD  
 Duncan A McCansh, VE3OM  
 Bernard McCoy, VE6HFD  
 Arthur McDougall, VE1CFU  
 David McKinlay, VA3IR  
 L David McLennon, VO1LM  
 Malcolm R McLeod, VE5ZG  
 Chris McMullan, VA3CMJ  
 Donald McPhee, VE3REO  
 Doug Mercer, VO1DTM  
 Eric Mills, VE1AST  
 Micheal Misiwich, VA6MIS  
 Lenard Moen Sr, VA3HBR  
 George Morgan, VE3GM  
 Ed Morgan, VE3GX  
 Byron Morse, VA3BMO  
 Bob Morton, VE3BFM  
 Hammond Museum of Radio,  
 VE3BJ  
 Mike Myers, VA3MPM  
 Garry Naylor, VE6FGN  
 A L Nelson, VE7WC  
 Jim Nelson, VE6ACR  
 Patricia Nordin, VE3RPP  
 Brett North, VO1BBN  
 Richard Novek, VE7RNZ  
 Kevin Patrick O'Toole, VE6GUN  
 R Oakenfold, VE5RO  
 Stephen Olesen, VE6SLP  
 Sheldon H Olmstead, VE3XI  
 Keith D Olson, VE4VO  
 Dennis Paganin, VA3DTP  
 Bill Parker, VE1VP  
 Joseph G Parkinson, VE3JG  
 G Passmore, VA7GAP  
 Brad Paterson, VA6AKF  
 Colin Pavey, VA3FP  
 Tim Pekkonen, VE3UO  
 Steve Pengelly, VE3STV  
 Mark A Perren, VE6IHS  
 Brent Petersen, VE9EX  
 Murray K Pierce, VE3IFP  
 Robert W Piggott, VE7CYU  
 Dale Pilsworth, VE6DAP  
 Gary Pollock, VA3GMP  
 Harold J Porter, VO1JA  
 Terry Potts, VE3TEP  
 Everett Price, VO1DK  
 Byron Pulsifer, VE9BUB  
 Tim Pychyl, VA3PYC  
 Devon Racicot, VE5DWR  
 Marty Raine, VE1AE

## **WELCOME NEW RAC MEMBERS!** **BIENVENUE NOUVEAUX MEMBRES DE RAC!**

*We wish to welcome the following new members of Radio Amateurs of Canada for August and September.*  
*Nous souhaitons la bienvenue aux nouveaux membres suivants de Radio Amateurs du Canada pour août et septembre.*

Sofronio Alejo, VE4JAL Phil Anderson, VA5APA Gerard Jerry Arsenault, VE9CD Timothy John Barkowski, VA7TJB Michael Edward Bazdarick, VA3MBZ Murphy Berzish, VE3TUX Ken Betenia, VE7KPB Erik Blake, VY1EWB Tammy Boesche, VA3TMI Mark Boman, VE6FL Jack Henry Botner, VE3LNY Kiernan Burr, VA6IP Logan Cadwallader, VA7LFC Denis Carnochan, VA6DBC Dennis Hardy Chisholm, VE6BGZ Corey Crawford Daniel Giulio Crocco, VE3CZQ Louis W Curti, VA7LWC Terry Cutler, VE5TLC Wade Dayment, VE6WSD Svend Robbert de Bruyn, VE3SWN Dave Dempsey, VE3EAB Pierre Desjardins, VE2PID Dennis John Doyle, VA3DOY Julianne Dunn, VA3JBD Avelino R Fernandez, VE4ANF Mark Fex, VE3FEX Bentley Fooks, VE7ODA	Ron Ford, VA5RJF Michael James Foreman, VE6AMC David Cameron Franklin, VE7DCF Peter Gauld, VE7PGX Frank Gibney, VE6FRK Gisele Gisele, W6GVH Dan Goodwin, VO1MX Dale Franklin Grant, VE6CPK Dimtcho Gueurguiev, VE7XDT Angelito Guevara, VE4LIT Frank Gufler, VA3GUF Bruno Haineault, VE2EQ Gisele Haineault, W6GVH Donald Hanna, VA3ANY Larry Hartwell, VE7LMH David E Hillman, VE3LFH Neil Holden, VA3FYX Alison Michelle Honsberger, VE3GRL Gordon Hunter, VE6WZL Terry N Hursh, W9CQG Ron Hutchinson, VE3NG Steve Janzen, VA5DWD Felix Jochin, VA6WV Brian Kelly, VO1QU Thomas Kirk, VE7THK Courtney Lai Hing, VE2FYV Vincent Leahy, VA3VJP	Corbin Lippert, VE3NIS Douglas Robert Mackintosh, VE6BC Albert Maringer, DB5IJ Akiharu Mimoto, VE7WTT Stuart V Morehouse, VE9STU Richard Steven Morrow, VE3JGX Michael Parent, VE3UWC Robert M Partridge, VE3SRD Brad Paterson, VA6AKF Andre Josheh Poirier Marc Poitras, VE3VEB Max Polishevskyy, VE6MAD Steven Leslie Potts, VA3TQ Ian Procyk, VE7HHS Karen Richards, VA6KMR Angel Richards, VE6SFN Keith Edmond Rowley, VE7KTR Ashley Sangster, VE1ABC Todd David Shea, VA3TDS Steve Sirois, VA2SNL Gordon Louis Smits, VE3UGG Dean Stennes, VE7NEW Fred Tenk, VA3OPA Paul D Wager, VE6VET Roderick Paul Walker, VE3WRP Clayton Wozney, VA3WOZ Joseph A Zaccaria, VE7TOL
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Norm Rashleigh, VE3LC  
 Bryan Rawlings, VE3QN  
 Steve Regan, VA3MGY  
 Gilles Renucci, VE2TZZ  
 Earl Richardet, VE7QJ  
 Dennis G Ritchie, VE3DXZ  
 Jeff Robbins, VE3JTR  
 Bernie Roche, VE3OTR  
 Peter Rogers, VE3ETR  
 Bruce Roney, VE3BER  
 Donald Rowed, VE3KII  
 Gerry Saelens, VE7DCW  
 Edward Samborski, VE3TAS  
 Patrick Sandi, VE7SDI  
 Brian Sayer, VA6BCS  
 Bill Scholey, VE7QC  
 John D Scott, VE1JS  
 Joseph T Scott, VE3ADB  
 David Scott, VE3ZZU  
 Ellis Seddon, VE4AJO  
 Ian Seddon, VE3HUT  
 Kieran Shepherd, VA3KS  
 Robert A Shkuratoff, VA7DIV  
 George B Simpson, VE6HX  
 Gary W Skett, VE7AS

William E W Skuta, VA3WEW  
 Robert A Smith, VE3RSG  
 Ian Snow, VA3QT  
 Dave Snydal, VE4XN  
 John Sobkowicz, VA6GEO  
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 Dean Stennes, VE7NEW  
 Al Stephens, VE3NXP  
 Jeff Stewart, VA3WXM  
 Jack Summers, VE3XR  
 Hiroshi Takahashi, VA7LET  
 Ann Tekatch, VA3NOE  
 Alan Thoren, VE4YZ  
 Jason Timmis, VE7AG  
 Yori Tsuji, VE4ACX  
 Ian Graham Turnbull, VE7TGI  
 WL Underwood, VE1WLU  
 Bill Unger, VE3XT  
 Henry Urbanowicz, VE3OEO  
 Ronald Vadeboncoeur, VE3REV  
 A E Vaillancourt, VE3DPZ

Hudson C Vallieres, VE9HCV  
 Todd Van Norman, VE7GBO  
 Bernie Van Tighem, VE7BVT  
 Marinus Vanderminnen, VA6OPA  
 Robert Vanderminnen, VA3RMV  
 Sanjay Vig, VA2OP  
 Maurice-André Vigneault, VE3VIG  
 Ron Vollick, VE3GGX  
 Andrew Webb, VE6EN  
 Albert Morris Webber, VE4AMW  
 Joel Weder, VE6EI  
 Garth Wetherall, VE3YC  
 Peter Wetton, VA3PRW  
 John E White, VA7JW  
 Barry L Wielgoz, VE5HA  
 Chris K Wiesner, VA3SM  
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 Ken Williams, VE9KW  
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 Harold H Wirth, VA3HHW  
 Timothy Wood, VA7TIW  
 K Scott Wood, VE1QD  
 Allen Wootton, VE7BQO  
 James E Wyse, VO1CPZ





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## In previous columns

I've discussed how those interested in receiving and, if properly certified, actually working through our growing fleet of Amateur Radio satellites could do so with just modest radio equipment. In this edition, I'll turn the spotlight on one of our oldest satellites – one that's been in orbit (and at least semi-operational) for going on 40 years now!

## AMSAT'S VENERABLE AO-7

AMSAT-OSCAR 7 (AO-7) was launched on November 15, 1974 by a Delta 2310 launcher from Vandenberg Air Force Base near Lompoc, California as a secondary payload along with ITOS-G (NOAA 4) and the Spanish INTASAT satellite. AO-7 was the second satellite in AMSAT's so-called "Phase II" satellite series (Phase II-B). That is, unlike their relatively short lifetime predecessor satellites that only carried beacon transmitters, AMSAT's Phase II satellites carried Amateur Radio RF transponders aboard.

When it was launched into a relatively circular, 1444 by 1459 km, 101.7 degree inclination orbit, the octahedral shaped (360 mm high and 424 mm in diameter) satellite weighed in at about 65 pounds (30 Kilograms).

Portions of this article previously appeared as "Spotlight on AMSAT-OSCAR 7" in the November, 2011 edition of Monitoring Times Magazine. The photo on the cover in artist's concept of how AO-7 might appear in orbit today. (Courtesy: AMSAT)

# AMATEUR RADIO SATELLITES

The antenna array consisted of a circularly polarized, canted turnstile VHF/UHF antenna system along with an HF dipole.

Similar to its immediate predecessor (AMSAT-OSCAR 6), AO-7 was built by a multinational (German, Canadian, United States and Australian) team of Radio Amateurs under the direction of AMSAT-North America. It carried both a *non-inverting* Mode A (Mode V/A) and an *inverting* Mode B (U/V) linear transponder. Telemetry beacons on 10 and 2 metres, as well as on 70 centimetres, rounded out the satellite's RF suite. Unfortunately, AO-7's 2304.1 MHz experimental beacon was never activated due to international frequency allocation issues.

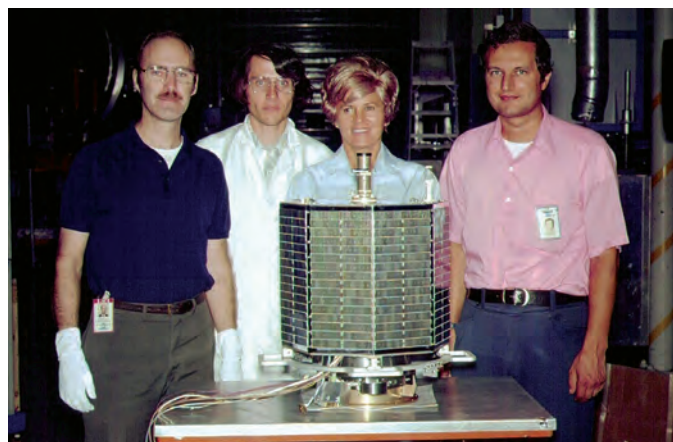
Four antennas mounted at 90-degree intervals on the base and two experimental repeater systems provided a so-called "store-and-forward" capability for Morse and Teletype messages as it orbited around the world. The Mode-B transponder was designed and built by Professor Dr. Karl Meinzer, DJ4ZC and Werner Haas, DJ5KQ (SK) of AMSAT-Germany. The Mode B transponder was the first such transponder using Dr. Meinzer's "HELAPS" (High Efficiency Linear Amplification by Parametric Synthesis) techniques – a technology that was painstakingly developed by Dr. Meinzer as part of his Ph.D. dissertation. HELAPS was very effectively used on a number of AMSAT's subsequent satellites.

The two transponders were operated alternately by means of a timer arrangement, but transponder selection and output power control could also be accomplished by ground command. Each of the transponders included a keyed telemetry beacon at the upper edge of the downlink passband to provide housekeeping data as well as a reference marker to assist Amateurs in setting their uplink power level. The crossband design of the two transponders were one of the first such arrangements that permitted Amateurs to monitor their own downlink signals so as to help them compensate for changing path loss, transponder loading and Doppler shift.

## THE LOST IS FOUND

AO-7 was operational for nearly seven years until a supposed battery failure caused it to cease operation in mid-1981.

Then on June 21, 2002, Pat Gowen, G3IOR, stumbled onto something he noted as "remarkable" when hunting for what he called



Members of the AO-7 project team pose with the fruits of their labour. From left are Dick Daniels, W4PUJ (SK); Jan King, W3GEY; "hired hand" Marie Marr and AMSAT Founding President Perry Klein, W3PK. (Courtesy: AMSAT)

"interlopers" on our 2 metre Amateur satellite band. During his search, he came across a beacon sending slow (8-10 wpm) Morse Code on 145.973 MHz that was also slowly drifting downward to 145.970 MHz before fading out completely. The beacon sounded *very* familiar to him, but, clearly, it was coming from none of the (then) current satellite fleet. And because of the Doppler shift, the signals were obviously coming from a satellite. But which one?

The beacon peaked at S9 and at times it took on a rough quality, wobbling in frequency, then coming back strong and quite stable again. To his surprise, Pat later learned that the satellite he had been listening to was none other than our old AO-7 that had somehow *come back to life!*

Jan King, W3GEY, the AO-7's original Project Manager later noted that the satellite had a very good set of solar panels and the first Battery Charge Regulator (BCR) AMSAT ever flew. It was also the first spacecraft AMSAT ever built that was capable of actually overcharging the battery. As expected, when the battery failed, one or more of the individual battery cells eventually failed "short".

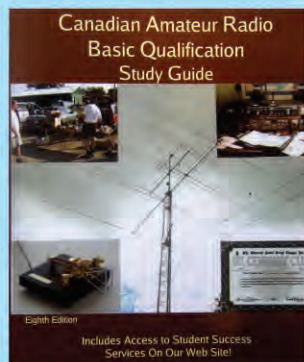
However, what AO-7's experimenters *hadn't* counted on was what would happen if any one of the failed cells lost its "short" and the battery circuit became "open". Then, the entire power bus would become "unclamped" from ground and all spacecraft loads (including the transponders) could then draw power from the highly efficient solar arrays. At that point, AO-7 might have enough solar power to become a "daytime only" satellite.

AO-7 FREQUENCY AND MODE DATA			
Mode	Uplink (MHz)	Downlink (MHz)	Beacons (MHz)
V/A (Mode A)	145.850 – 145.950	29.400 – 29.500	29.502
U/V (Mode B)	432.125 – 432.175	145.975 – 145.925	145.975 and 435.100

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Indeed, this is *precisely* what has since happened and what has miraculously caused AO-7 to come back to life after so many years of being dormant. The only downside to this now "daytime only" satellite is that every time sunlight hits the spacecraft and it powers up after exiting an eclipse, AO-7 comes up randomly in either Mode V/A (the old Mode A) or Mode U/V (the old Mode B).

## CURRENT STATUS

Subsequent analysis has revealed that, even after almost 40 years in orbit (and with the notable exception of the now "open" battery), AO-7 remains in surprisingly good shape. The solar arrays, the BCR, the Instrumentation Switching Regulator, along with the Mode B and Mode A transponders appear to all be working beautifully. What's more, the Morse Code telemetry encoder and voltage reference circuitry and other onboard electronics are all still providing useful data to AO-7's ground handlers. And what a testament AO-7 has since become for a satellite that was built (quite literally) by a group of "amateurs" in their basements and garages and launched into Earth orbit almost 40 years ago!

## WHEN AND WHERE TO LISTEN

Since it sprang back to life, AO-7 has once again become one of AMSAT's most popular linear (analogue) satellites. Indeed, when AO-7 is in full sunlight, it provides surprisingly strong (albeit somewhat "chirpy") downlink signals – even using modest satellite antenna arrays.

However, it takes a bit of patience to determine which mode the satellite is in when it first pops over the horizon. I do this by first setting my *downlink* frequency in the middle of either passband (at, say 29.450 MHz or 145.950 MHz) and then send a few widely-spaced CW "dits" on the uplink while tuning the frequency of my uplink signal around. Once I hear my own "dits" coming back to me on the downlink, I immediately know which mode the satellite is in, and I then start looking for a contact.

## OPERATING TIPS

Because of its relatively high power (2-8 Watt) downlink transmitters, you should be able to hear very weak signals from AO-7 without needing a lot of uplink power. Remember, this satellite was *never* intended to be an FM bird! Indeed, I've successfully worked through AO-7 with 5 Watts or less to my eggbeater antennas. You may need to increase power if the satellite is at a distance, but be sure to reduce power as the satellite approaches.

Unfortunately, AO-7's mode B uplink is also in the middle of the informal, 70 cm, so-called "weak signal" terrestrial band that was established *after* AO-7 first went silent. Excessive uplink power may interfere with other services in that band, and may be considered by some to be a spurious, out of band emission.

In addition, if you hear your downlink signal start to rapidly change frequency (indicated by a "warbling" sound) this means you are putting too much power into the bird. Reduce power and the situation should correct itself. What's more, as the strongest signals are in the middle of the passband, you will therefore need less power to hear your downlink there. Remember, too, that, voice signals strain the power system on AO-7 the least. So if you are using CW, please be extra vigilant about the amount of uplink power you are using. Hopefully, with reasonable care from all of us, AO-7 has many years of "semi-operational" life still left in it.

## WRAP UP

That's all for this time. In future columns, I'll once again focus on another series of Amateur Radio satellites now in orbit and I'll bring you up to date on other happenings in this fascinating aspect of our radio hobby.

See you then!





# RBR-4, RIC-3 AND CEPT RECIPROCAL OPERATING PRIVILEGES

## RADIO AMATEURS OF CANADA WRITES TO INDUSTRY CANADA SEEKING UPDATE

**Norm Rashleigh, VE3LC**  
**RAC Representative Officer**

RAC has sent correspondence to Industry Canada reminding the Department of several issues that require attention regarding policy and information in the core regulatory and information documents that govern the Amateur Radio Service in Canada.

A letter addressed to the Director General of Operations was sent by President Bawden on September 19 requesting attention be given to updating RBR-4 (Standards for the Operation of Radio Stations in the Amateur Radio Service) and RIC-3 (Information on the Amateur Radio Service). The information contained in these key documents has been out of date for several years and although the necessity for update was identified at past CARAB (Canadian Amateur Radio Advisory Board) meetings with Industry Canada, revisions remain outstanding.

The following are the main elements of concern that need attention by Industry Canada:

1) RBR-4 contains the schedule of Amateur Radio frequency allocations in Canada. This schedule is not consistent with the Canadian Table of Frequency Allocations (CTFA).

Specifically, RBR-4 still indicates the 1½ metre band as 220 to 225 MHz when, in fact, the allocation was reduced to 222 to 225 MHz several years ago.

In addition, the current version of RBR-4 does not include the addition of 135.7 to 137.8 kHz secondary Amateur allocation which appeared in the 2009 version of the CTFA.

At this late stage of the revision cycle, RAC now expects RBR-4 to be updated to include the new 630 metre allocation, 472 to 479 kHz, as well as the six 5 MHz channel allocations that were the subject of Industry Canada consultation SMSE-010-12 last year.

2) It seems that what is written in Section 3.1 of RBR-4 implies that a foreign Amateur still requires Morse Code qualification to operate with HF privileges in Canada. And Section 5.1 of RIC-3 implies the same requirement for American Amateurs operating in Canada.

It should be noted that US Amateurs are no longer offered a Morse Code test by the FCC and therefore have no official means to demonstrate proficiency.

RAC has requested this code policy for foreign Amateurs operating HF in Canada be repealed forthwith and the Amateur Radio Service Centre be advised accordingly.

3) The information in the current version of RIC-3 about reciprocal operating privileges in countries that are signatories to CEPT/ECC recommendation T/R 61-01 is obsolete.

The CEPT class 1 or 2, based on Morse Code qualification or not, is no longer a part of the new ECC/CEPT recommendation T/R 61-01 which took effect in 2003.

RAC has requested that Industry Canada re-establish with ECC/CEPT the qualification equivalencies between the levels of Canadian Amateur certificates and that of the new CEPT T/R 61-01 licence in which code proficiency is not a factor for qualification.

In addition, there is now a lesser CEPT "Novice" licence known as ECC Recommendation (05) 06. RAC has advised Industry Canada that it should also seek participation in this recommendation, by appropriate application to CEPT, to ensure Canadian Amateurs without an Advanced qualification still have an option of restricted operating privileges when travelling abroad to CEPT signatory countries.

4) Although not identified in the correspondence, there are other changes required in RIC-3 and RBR-3 that reflect changes in the Radiocommunications Regulations such as the repealing of Section 32. In the process of editing RBR-4 and RIC-3, Radio Amateurs of Canada has also offered assistance to the Department by way of review and comment of draft revised documents.

### REFERENCE DOCUMENTS:

RBR-4 "Standards for the Operation of Radio Stations in the Amateur Radio Service": <http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf01226.html>

RIC-3 "Information on the Amateur Radio Service": <http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf01008.html>

Canadian Table of Frequency Allocations: [http://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/cane2009edition-eng.pdf/\\$FILE/cane2009edition-eng.pdf](http://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/cane2009edition-eng.pdf/$FILE/cane2009edition-eng.pdf)

Radiocommunications Regulations of Canada: <http://laws-lois.justice.gc.ca/eng/regulations/SOR-96-484/>

ECC/CEPT Recommendation T/R 61-01 "CEPT Radio Amateur Licence": <http://www.eroocdb.dk/Docs/doc98/official/pdf/TR6101.pdf>

ECC/CEPT Recommendation (05)06 "CEPT Novice Radio Amateur Licence": <http://www.eroocdb.dk/Docs/doc98/official/pdf/Rec0506.pdf>



## DARF IS THE DEFENCE OF AMATEUR RADIO FUND

It is a Trust Fund established in the early 90s by the Canadian Radio Relay League to provide financial support for research, and to defray travel expenses of a delegate to World Radio Conferences to defend the Amateur Radio bands.

The Fund is maintained by Donations from individual Canadian Amateurs and from Canadian Amateur Radio Clubs.

Donations are deposited in the trust fund account and the fund is administered by the three DARF Trustees.

The trust is entirely separate from, and cannot be used for, RAC financial transactions.

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Visit [darf.rac.ca](http://darf.rac.ca) for more information.





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# YL NEWS AND VIEWS

## OUR YL PROFILE: RUTH MILLS, VE4XYL

Hello, I hope everyone is doing well. Wow, I can't believe it's wintertime already. Where did the summer go?

This time around we are going to meet a lovely YL who lives in the centre of Canada. Sorry to those of you who live in Ontario, but Winnipeg, Manitoba is actually the Centre of Canada. Even though the newspapers, National News etc always calls Ontario Central Canada...

Ladies and Gentlemen, I give you Ruth Mills, VE4XYL. Ruth lives in St. James in Winnipeg. She grew up in a small community near Swan River, Manitoba called Ethelbert, which Ruth says is now just a sign posted on the side of Highway 10. She took her Grade 9 by correspondence. Ruth actually left home after Grade 9 and came to Winnipeg for work and to finish her education.

Ruth says she is a country gal, loves the fresh air and the openness. Ruth was a long-distance MTS operator before she got married. Ruth worked part time at the Health Science Centre from 1979 to 1990 and she also volunteered in schools. She also told me that the Centre used to be where her and Tom's first house stood.

She was always interested in radio, but really didn't do anything about it until 1992 when she finally decided, like most of us gals: "If you can't beat them, then join them." Ruth's OM Tom, VE4SE (smoke eater; he is a retired fireman) has had his Amateur radio certification since the early 1960s. Her son Ken is also a ham, VE4KEN, as is his wife Cheryl, VE4CHR.

She says that they belonged to Amateur Radio clubs. And of course we all know that the women of hams help out at all the fleamarkets, hamfests and other related activities so several of the YLs were also her Elmers.

As I said earlier, Ruth got her certification in 1992. She took classes at the old St. James Collegiate (small world, that used to be my high school) which now I believe has changed its name to The Academy of Science & Technology (ATec). Her instructor was Wayne Warren, VE4WR.

Ruth says she is not really on the radio much because her involvement and greatest pleasure comes from helping out. She loves getting food ready for the groups and selling tables for fleamarkets. Yes, she has been on the radio, but the face to face QSOs are her actual favourite way to meet fellow hams.

Her involvement with the Winnipeg Amateur Radio Club is very fulfilling. She has participated with the Amateur Radio Emergency Service, the Manitoba Marathon as well as in several fleamarkets in Winnipeg, Brandon and Austin. She says that she has made bunwiches by the thousands over the years and says sales have always been good.

Ruth says she has a real knack for selling tables for the fleamarkets and really enjoys the camaraderie of fellow hams. She is also a willing volunteer at any Amateur Radio event. During the Threshermen's Reunion at the Manitoba Agriculture Museum in Austin, Ruth and her OM Tom, VE4SE, play a very valuable part in showing the attending public what Amateur Radio is all about when they enter the display building.

Over the years she has worked at the Spring Fleamarket and at Field Days in June where she thought nothing of preparing three meals a day for three days.



She also works the lunch counter at the MARMFest at the Manitoba Amateur Radio Museum in August, goes to the club meetings and then it's on to the October Fleamarket.

Ruth says that this year the Winnipeg Hamfest committee decided that they would hire a food cart instead of having Ruth dog all the work; she was sure glad of that. She has cleaned out her basement and given away all the extra large pots and utensils that she has used over the years to feed everyone at these events.

Ruth is still involved with the ham clubs and is committed to helping at the Winnipeg Senior's Centre; and she did tell me that she knows Gil who is always on 20 metres on Tuesday mornings at 1700Z at 14.120 for the CLARA net. Please pass on a hello to him Ruth from all us gals.

Ruth and Tom have eight grandchildren and four great-grandchildren.

I was supposed to meet Ruth this summer when my OM and I went to Winnipeg. We made these plans but, due to circumstances, they did not materialize. The day we arrived in Winnipeg, Ruth and Tom were on their way to Brandon to see one of their grandchildren graduate from the University of Brandon. Oh well, there is still time to meet Ruth personally. Ruth also has been a great help to me when I was looking for Gluten-free recipes. Her bread recipe is wonderful.

Thank you Ruth for your information and I must also thank Dave Syndal, VE4XN, for the extra information that he so graciously sent to me.

Don't forget ladies, the CLARA net meets every Tuesday at 1700Z at 14.120 MHz. We would love to have you join us on the net. You do not have to be a CLARA member.

We also accept OM checkins. The more the merrier. Also don't forget to check out the CLARA website at <http://www.clarayl.ca>. We are always adding new pages and photos.

I hope everyone has a Very Blessed and Happy Christmas. We will see you in the New Year.

*33, 73, 88 or whatever the case may be... Val*



# Building the VE3FIT JOTA Special

## Ken Grant, VE3FIT

When I was asked to run a 20 metre station for the Scout Jamboree on the Air (JOTA), I had to put together an antenna in a hurry. An idea had crossed my mind whenever I had contemplated the bits and pieces (junk?) kept in my garage. Now, it was time to act.

This antenna was built from materials that were mostly already on hand. Thus, it satisfied Requirement #1: it had to be cheap to build.

Requirement #2 was that it had to be easily transported, erected and disassembled.

Requirement #3 was that it had to offer at least the prospect of reasonable performance on 20 SSB.

It is basically an aluminium, tapered, telescoping painter's pole (donated) used as a quarter-wave vertical with 16 quarter-wave radials as a ground plane, all held upright in a Black & Decker Workmate portable bench (see Figure 1).

The pole is made by Mallory Industries, model 117-16. It's 16.5 feet long when fully extended. Perfect for 14.2 MHz. It telescopes in three sections, held rigid by a pair of compression locks. Because it's made of anodized aluminum (the surface of which is non-conductive), I had to extend the pole fully, lock the sections together and then drill a hole for a #6 self-tapping sheet-metal screw about a half-inch below each lock. This gave me DC and RF continuity from one end of the pole to the other (see Figure 2).

The pole is hollow and would be deformed or crushed if clamped directly by the jaws of the Workmate. I found an old shovel handle made of ash-wood which fit nicely into the open end of the pole and serves as a support. One end of the support rests on the ground and the other end holds the aluminum pole about five inches above the working surface of the bench (see Figure 3).

I made an angle bracket from a piece of scrap aluminum and fitted an SO-239 coax socket to it.



Antenna awaiting final deployment.

The bracket is bolted to the wooden support. The centre pin of the SO-239 is connected to the aluminum pole with a short piece of wire, a solder lug and a #6 screw (see Figure 4).

Each radial is also 16.5 feet long and is made of #22 enamelled copper wire (donated long ago by an SK) soldered to a ring made from a piece of #12 bus wire. The ring is then joined to the chassis side of the SO-239 with two short pieces of wire. When the radials are unrolled and fanned out, they're anchored to the ground with cheap plastic tent pegs. I had to buy the tent pegs, but Canadian Tire happened to have them on sale :)

The completed antenna, ready for the radials to be unrolled and the coax feedline to be attached, is shown in the photo at the top centre.

After the feedline was attached, I used an SWR analyzer to check for resonance. Lo and behold, the SWR bottomed out right at 14.2 and was less than 1.5 to 1 right across the band.

*Life doesn't get much better than that.*

I hooked up my Kenwood TS-680 XCVR and proceeded to work W4s, W7s and W0s with good signal reports.

After you've deployed the antenna in the field, it's a good idea to surround the radials with yellow warning tape mounted atop wooden stakes.

The antenna performed very well on JOTA. We had many contacts in England and all over the US. And, the pole can still be used to paint very tall ceilings. 73.



Figure 1: Antenna components before assembly.



Figure 2: Self-tapping screws provide continuity.



Figure 3: Antenna mounted in Workmate.



Figure 4: Feedpoint detail.

Ken Grant, VE3FIT, recently retired after a 45-year career as an electronics technologist in the healthcare field. He lives in Scarborough, Ontario with his wife of 43 years, Marlene. Together, they have raised three sons. His non-ham interests include travelling, history, bicycling on his 1974 Raleigh ten-speed and a bit of gardening.



# All Things Digital

## Amateur Radio for the 21<sup>st</sup> Century O11

Robert C. Mazur, VA3ROM

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## THE WEAK SIGNAL PROPAGATION REPORTER (WSPR) – PART 2

**Note:** References and resources mentioned are listed at the end of this article. My "All Things Digital" webpage has additional material (and software). Technical details were covered in the WSPR: Part 1 article in the September/October 2013 TCA.

### WSPR I-DEVICE APP

Before we start, I forgot to mention in my last column a free Apple iOS app called "WSPR Watch" available on the iTunes store, but there is no corresponding Android app or any iDevice WSPR transceive capability.

### BUILD A WSPR KIT OR TWO

**Note:** I've converted both kits' schematics to standard block diagrams and simplified the radio theory and mathematics.

Two kits are available: one is a PICAXE controlled transmitter (Figure 1) by Jay Wilson, W5OLF – no computer required. The other is a direct conversion receiver (DCR) by Stellar WSPR (Figure 3) and it connects (via soundcard) to any computer running the WSPR software.

### WSPR-AXE TRANSMITTER

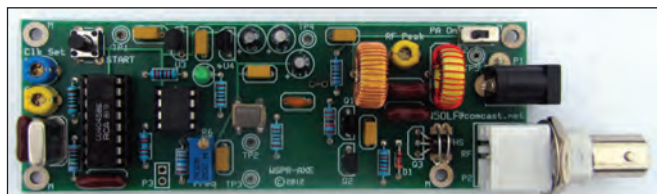


Figure 1: WSPR Transmitter Kit

Available for the 20 or 30 metre bands, the WSPR Transmitter (see Figure 2), combines a PICAXE 08M2 microcontroller unit (MCU), 1PPS (pulse per second) clock, custom voltage controlled crystal oscillator (VCXO), and a QRP (1 Watt or 30 dBm) transmitter. The MCU is loaded with a proprietary PICAXE BASIC program along with your call sign, grid square and power (in dBm) encoded as 162 WSPR symbols (0 to 3).

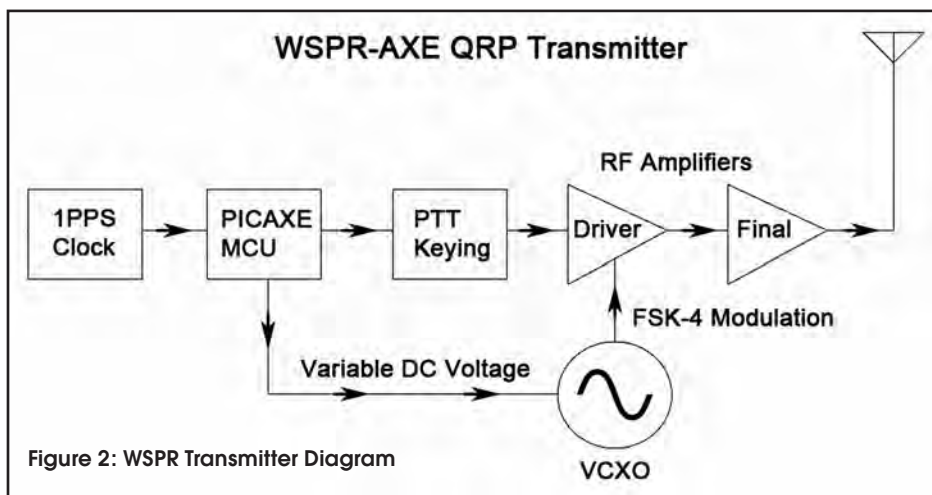


Figure 2: WSPR Transmitter Diagram

The 1PPS clock keeps the timing accurate for long-term use but can be replaced with a GPS with 1PPS output for more stability and accuracy.

The VCXO generates a user-adjustable carrier for any frequency inside the 200 Hz wide WSPR transceive "window" centred on 14097.100 kHz (20m) or 10140.200 kHz (30m).

When a WSPR beacon sequence starts, the transmitter turns on and uses continuous phase, 4-level frequency shift keying (FSK-4) modulation to transmit beacon information (110.6 seconds).

The MCU retrieves each WSPR symbol from its memory and uses a variable DC (offset) voltage to make slight adjustments to the VCXO frequency. A 12-13.8V DC power supply is preferred because battery operation can cause frequency drift (a few Hz) during transmissions.

**Note:** WSPR symbols have 1.465 Hz separation: Symbol 0 = 0 Hz (no shift); Symbol 1 = 1.465 Hz; Symbol 2 = 2.93 Hz; and Symbol 3 = 4.395 Hz (shift). Also, the WSPR software is extremely tolerant and integer shifts will work just as well.

### STELLAR WSPR RECEIVER

**Note:** The related article "The Radio Whisperer" by George Steber, WB9LVI, describes the original receiver design and operation.

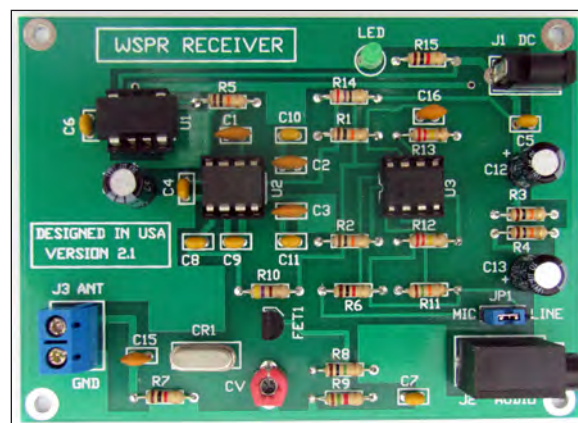


Figure 3: WSPR Receiver Kit

Available for the 20 or 30 metre bands, the WSPR Receiver (see Figure 4 on the next page) is a DCR or Zero-IF (0 Hz Intermediate Frequency) receiver which uses a custom VCXO called a "local oscillator" (LO) in a receiver circuit.

Because DCRs are very sensitive, broadband, and can demodulate CW/SSB signals (but not AM/FM) there is no easy way to select/reject a



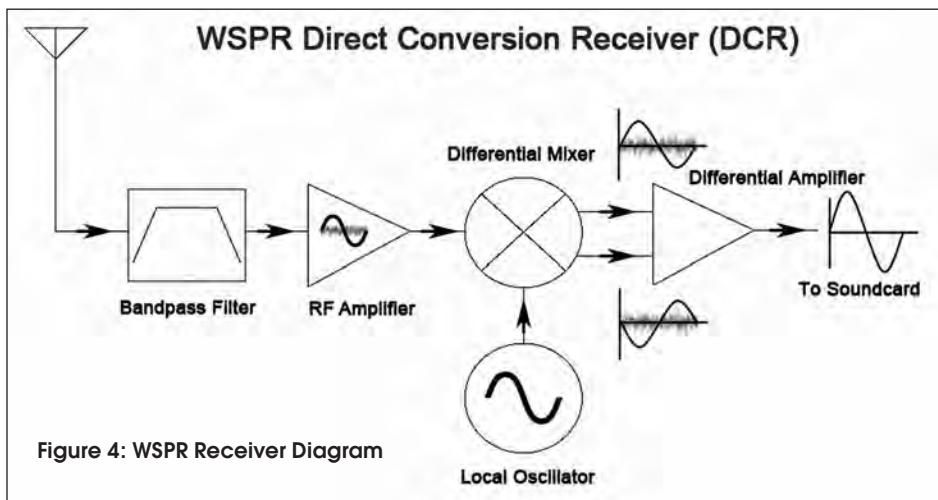


Figure 4: WSPR Receiver Diagram

specific sideband from the crowd, so this receiver uses a custom-cut crystal to create a very narrow and frequency specific bandpass RF filter effectively blocking (for the most part) everything but WSPR signals.

WSPR signals mix with the LO frequency of 14,095.600 kHz (20m) or 10,138.700 kHz (30m) and create two new signals: the sum (an RF signal) and the difference (an audio signal). This mixing or "heterodyning" of radio signals was invented by Canadian radio pioneer Reginald Fessenden in 1901.

Let's "freeze" a signal on 14097.150 kHz and mix it with an LO of 14095.600 kHz:

$$14097.150 + 14095.600 = 28192.750 \text{ kHz}$$

$$14097.150 - 14095.600 = 1.55 \text{ kHz or } 1550 \text{ Hz}$$

The 1550 Hz audio signal passes through a soundcard's audio lowpass filter for digital signal processing (DSP) and decoding by the WSPR software, and the RF signals are tossed away!

## WHAT A DIFFERENTIAL QUADRATURE MAKES!

This DCR uses a "differential" mixer (two outputs) and produces a differential signal processed by a differential amplifier or "diff-amp" (two inputs). The differential signal is composed of noise plus the in-phase WSPR signal – let's call it the "I channel" – and a phase-shifted 180 degrees (inverted or negated) WSPR signal – let's call it the "D channel".

The noise is called "common-mode" because it's applied to both diff-amp inputs and, while you can't remove all noise, our diff-amp has a typical common-mode rejection ratio (CMRR) of 80 dB (a voltage ratio of 10,000)!

Here's how the diff-amp works:

$$I \text{ CHANNEL} = (\text{NOISE} + \text{SIGNAL})$$

$$D \text{ CHANNEL} = (\text{NOISE} - \text{SIGNAL})$$

The two composite channels enter the diff-amp but only the difference (as in subtraction) between them comes out:

$$(\text{NOISE} + \text{SIGNAL}) - (\text{NOISE} - \text{SIGNAL})$$

$$\text{NOISE} - \text{NOISE} = \text{ZERO (Right?)}$$

But what about:

$$+ \text{SIGNAL} - - \text{SIGNAL} =$$

Remember the rules for negative number arithmetic? When you subtract any negative number, the sign and the

operation changes to positive and addition:

$$+ \text{SIGNAL} + \text{SIGNAL} = + 2 \text{ SIGNAL (Trust me!)}$$

If you understand the differential concept then it's just a short hop to the software defined radio (SDR) because the DCR is its heart, but instead of a differential mixer the SDR uses a "quadrature" (as in quarter or quadrant) mixer which also produces two outputs: the in-phase or I channel and a quadrature or "Q" channel, phase-shifted 90 degrees.

This subtle change in phase-shift and the mathematical manipulation of the IQ channels provides sideband selection/rejection, more noise reduction, variable software-defined transceiver filters, visual display of any "slice" of the RF spectrum, the modulation/demodulation of all known radio modes and the creation of new ones, etc.

## WSPR IN THE CLASSROOM

Amateur Radio is an excellent classroom tool to teach any subject using simple and practical real-life applications. You must have HF privileges to use the transmitter, but anyone can use the receiver and upload data to WSPRnet with the WSPR software with an alias instead of a call sign, and also access the WSPRnet data online, or download and process data with an Excel spreadsheet by Mark Hughes, GM4ISM, with enhancements by Dr. Carol Milazzo, KP4MD.


	A	B	C	D	E	F	G
	Macro to access WSPRnet databas						
	GM4ISM with additional analysis by Ca						
1		Get Web data					
2		Band List	Date UTC	Minute index	Time UTC	Call	Frequency
3		All	07/09/2013	59795548	4:28:00 PM	VA3ROM	14.097159
4		2190-600m	07/09/2013	59795548	4:28:00 PM	VA3ROM	14.097141
5		160m	07/09/2013	59795548	4:28:00 PM	VA3ROM	14.097140
6		80m	07/09/2013	59795548	4:28:00 PM	VA3ROM	14.097151
7		60m	07/09/2013	59795548	4:28:00 PM	VA3ROM	14.097153
8		40m	07/09/2013	59795548	4:28:00 PM	VA3ROM	14.097145
9		30m	07/09/2013	59795548	4:28:00 PM	VA3ROM	14.097143
10		20m	07/09/2013	59795548	4:28:00 PM	VA3ROM	14.097143
11		17m	07/09/2013	59795548	4:28:00 PM	VA3ROM	14.097145
12	Statistics						
13			Date UTC/T	Time U	Frequency	SNR	Drift dBm
14		Mean	2013-09-07	12:44	14.097144	-13.7	-0.148 30 44
15		Median	2013-09-07	14:34	14.097144	-14	0 30 45
16		Mode	2013-09-07	15:38	14.097145	-19	0 30 45
17		Maximum	2013-09-07	23:58	14.097181	6	3 30 28
18		Minimum	2013-09-06	0:04	14.097085	-30	-3 30 45
19		Standard Deviation	1900-01-00	8:29	1.17909E-05	6.554	0.6173 0 61
20		Sample Variance	1900-01-00	3:00	1.39025E-10	42.955	0.381 0 56
21		Standard Error	1900-01-00	0:16	3.7455E-07	0.2082	0.0196 0 45

Figure 5: Composite Image of WSPR Data Collection & Analysis of WSPR-AXE Transmitter.



With reference to Figures 5 and 6, I was testing the frequency stability and drift of my 20m WSPR-AXE transmitter using the WSPR spreadsheet; it's a fantastic tool not only for this purpose but for learning Excel macro/VBA language programming. Note that many stations aren't reporting my exact frequency but are equally above and below it. I'm guessing that it's a lack of proper system calibration and any soundcard and/or receiver errors are magnified. But, perhaps after a few bounces off of the ionosphere and the ground, things happen to the signal? In the end, it just doesn't matter because if enough data is received from the "collective" or "hive-mind", simple statistics sorts it out so long as each station's reports stay consistently high, low or close.

You can try different antenna types and compare their effectiveness and reception patterns to determine if WSPR can "see" any differences (1 dB resolution) or compare diurnal and seasonal HF propagation variations and how the sun, ionosphere and Earth interact to affect them. Learn about the Maidenhead Locator System and how latitudes and longitudes are converted to alphanumeric groups (it's more efficient and less error prone to use "EN58" or "EN58JK" with voice or digital). Also, see George Smart's, M1GEO's, WSPR blog and his experiments and results.

Many Amateurs and shortwave radio listeners (SWLs) exchange WSPR QSL cards (see Figure 7) and they make for interesting classroom "wallpaper" – less boring to look at than numbers and graphs, eh?

The Stellar WSPR website has educational links and resources, plus sample lesson plans developed by Professor Lynne Reynolds, Ph.D., with suggested student projects and activities.

## MY FINAL

In the next column, we'll look at the world of Web-based SDRs and how you can use them for voice and digital modes (24/7), even if you don't or can't have radios or antennas.

Well, another year has come and is almost gone, and I wish you and yours a Happy Holiday Season and a Happy, Healthy and Prosperous New Year! – 73

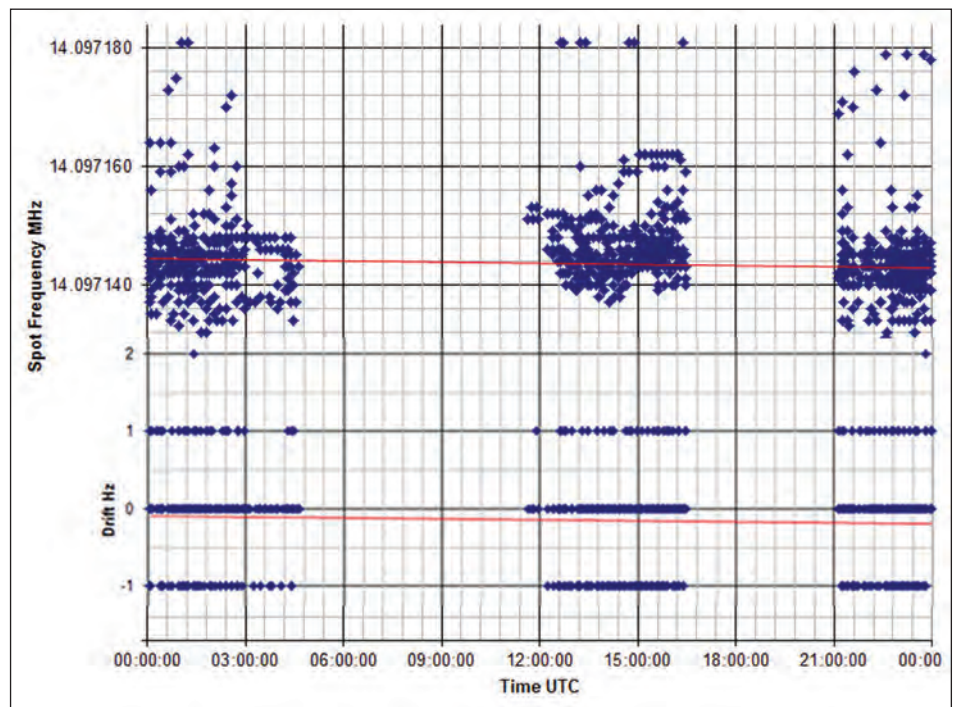


Figure 6: Composite Image of Frequency and Drift of WSPR-AXE Transmitter

## REFERENCES AND RESOURCES

### Audio Spectrum Analysis & Editing Software

<http://tinyurl.com/n6vf9o4>

<http://tinyurl.com/nfakd>

<http://tinyurl.com/7xp2v>

### Differential Amplifier

<http://tinyurl.com/2ydn5h>

### Direct Conversion Receiver

<http://tinyurl.com/palztd4>

### Fessenden, Reginald

<http://tinyurl.com/yzyk7jm>

### Heterodyne

<http://tinyurl.com/kj6lk4>

KP4MD WSPR Modes FAQ

<http://tinyurl.com/ou6m6jd>

### Maidenhead Locator System

<http://tinyurl.com/okrsbkm>

### "The Radio Whisperer" (PDF)

<http://tinyurl.com/lwarpne>

### WSPR Kits

<http://tinyurl.com/pob9236>

<http://tinyurl.com/pm7sjya>

### WSPRnet & WSPRmap

<http://tinyurl.com/kqk8lz>

<http://tinyurl.com/pjg7qsn>

### WSPR Protocol & Statistics (M1GEO)

<http://tinyurl.com/mn3l5fn>

<http://tinyurl.com/nxrwah3>

### WSPR Software & Documentation

<http://tinyurl.com/lbcykc3>

<http://tinyurl.com/n2yf2jz>

<http://tinyurl.com/ogmkh85>

<http://tinyurl.com/2wgcp2f>

### VA3ROM: All Things Digital

<http://tinyurl.com/d8nle3l>



Figure 7: WSPR SWL QSL Card (Netherlands)





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### **This is the 45th and last Club Corner column.**

I have decided to step down as I have found that I do not have the quality time to put into this endeavour. My work situation has changed and I have found some other interests so it is time that I step down.

I have enjoyed the time that I have spent working on this column. I have learned a lot about various clubs around the country, but most of all, in my travels, I have met folks who have been nothing but encouraging and supportive. I travelled to Dayton, Ohio for the Hamvention a number of years ago and had the pleasure of working with some of the great administrators and, over the course of those few days, I met and visited with many of the rank and file members of RAC.

As you many have noticed from my last few columns, I have taken an interest on Summits on the Air (SOTA) and have made some activation of peaks here in the lower mainland area of British Columbia. From this interest, I have taken to operating my QRP radio and portable antennas out in the field.

# **CLUB CORNER**

## **— NEWS FROM AND ABOUT CLUBS**

I have enjoyed many hours of Amateur Radio in the great outdoors, but also the trek to and from the radio site which has been both challenging and an experience all in itself.

In the two weeks prior to writing this column, I spent time in Cornwall, England, visiting some of the many picturesque Oceanside sites of that county. I operated my radio (under CEPT permit authority) on the Marconi site at Poldhu, on the beach near St. Michael's Mount, and other parks and beaches. Aside from missing the good weather by two weeks, it was an exhilarating and memorable experience.

I shall treasure the time that I have spent working on this column. Thanks to all the club newsletter editors for getting me their publications; they all show the dedication and hours of the work put into them. I shall miss keeping up to date with them as time moves on.

In the meantime, there are a number of clubs that have sent me their newsletters this month so here goes my report.

Most clubs stand down over the summer and some have some limited activities. The West Island ARC, in their newsletter, had a photo story detailing the Solder Spot Antenna workshop held by Gilles Renucci, VE2TZZ, at the Pine Beach Citizen Association Club during July and August. This workshop detailed a look into antenna design using Computer Assisted Design (CAD) and optimizing current antenna setup for DX activity. Gilles covered the design and building of antennas including the consideration of nearby terrain, height, radials, stacking and the considerations of choosing the "best" antenna for limited space installations.

The topic of antennas is a never ending subject, and everyone who has one (or two) will have some ideas on how well one works over another, and how to improve them – after all, the most inexpensive improvement we can make to our stations is an improvement in our antenna system. A link to the workshop is available at: <http://ve2xcs.weebly.com/solder-spot-antenna-workshop.html>



Ralph Webb, VE7OM, stands beside the Marconi memorial on the hillside by Poldhu Cove, Cornwall, the transmitter site of the first transatlantic radio signal. It was received by Marconi at Signal Hill, Newfoundland on December 12, 1901.

In the Winnipeg ARC's, "The Newscaster", the club reported that a full class of 18 students is ready to participate in the Amateur Basic course. Many clubs across the country are starting their courses at various classrooms. Having these clubs foster the learning process, so that the students can actually rub shoulders with Amateurs in their learning process, is invaluable where

lots of learning can be had without actually talking to someone. I salute those clubs who take it upon themselves to foster this interaction. Also in the WARC newsletter, was a notice that a conference is being planned dealing with the concept of Software Defined Radios (SDR). The conference/workshop is envisioned to include labs on the currently available SDR platforms as well as classes on their hardware, setup and related projects such as antennas, radio networks, and advanced radio circuits.

The "Dummy Load", the newsletter of the Cambridge ARC, had a resume of upcoming DX activities. Included in the list is Pekka Ahlqvist, OH2YY's activity in Nepal and Bhutan. He will be active using 100W and simple antennas during his time in these countries. In addition, Jovica, E787V, has a work assignment in Jordan. He has received a domestic licence (JY9FC) and will be operating in Amman. He will be there at least until the end of 2013 and possibly beyond.

Other DX activities were noted and are available on various DX activity sites. Additionally, in the newsletter, an article of weak signal detection using light was detailed. Somewhat "off the wall" in some cases, but as we age and our hearing goes, maybe we can start relying on our eyes – but then again sometimes our sight goes before our hearing.

In any case, the way this works is that radio waves are converted into light signals which can be detected and analyzed using standard optical tools.

A thin membrane is suspended above an electrode forming a capacitor which is part of an LC circuit which detects radio waves at its resonant frequency.

# ... A TALE OF TWO LIGHTHOUSES: OTTAWA AND TORONTO ...

**Maurice-André Vigneault, VE3VIG**

Once again, and for the 15th year, the Ottawa Valley Mobile Radio Club (OVMRC) participated in the International Lighthouses and Lightships Weekend (ILLW), which was held on August 17 and 18. We also helped to set a record for this international event.

We have been participating in the ILLW since its inception in 1998, when we set up our station inside the Canada Science and Technology Museum artifact lighthouse in Ottawa known as Cape North Old (Museum) and registered on the Canada list of lighthouses as CA569. For the ILLW we use the ILLW list number CA0016.

Last year the event gathered 473 Lighthouses (LH) / Lightships (LS) in 47 countries, which was a record for the event. This year's objective was to set a new record of 500 LH/LS around the world. The final tally totalled 526 LH/LS from 54 countries, indeed a new record.

We operated from a trailer which was modified to be used as an emergency operating station. In the trailer, we used the Club Kenwood TS-850Sat with the Cushcraft R7 antenna mounted at the front corner with an extension pole. Michel and his son Charles set up on the dining table, with his SDR Flex-1500 feeding a G5RV mounted in the adjacent trees with the help of Sandy and his fishing rod. I was a third station using my new mobile setup with an ICOM IC-7000 and LDG autotuner. My antennas were Hustler verticals with the 52-inch extension and resonators for 80, 40 and 20 metres, and powered by two 32 amp/hour batteries in the trunk. Michel, having limited success with his QRP Flex radio, brought in his Flex-5000 the next day and easily reached Brazil, Argentina and Europe. However, the highlight of the event was David's, VE3ZZU, backpack QRP setup. He complemented his excellent Elecraft KX3 radio with a very expensive power arrangement.

Sandy did a great job in organizing the event, treating us with food and coffee, and welcoming the visitors who were curious about our operation. It was a fine opportunity to present Amateur Radio to the public. We had the pleasure of a visit from Bob, VA3QV, Jose, VA3PCJ and James, VE3MYZ, who came to encourage us and stayed to help with the take down.

On behalf of the OVMRC, we direct our thanks to the Canada Science and Technology Museum which allows us this annual fun outing, and to the Amateur Radio crew who has been consistent year after year. Congratulations go out to every one for making a new record possible. This goes for Canada as well with a record of 21 Lighthouses participating. We are looking forward to more fun next year.

The photo shows the OVMRC crew taking a well-deserved break. From left are: Sandy, VE3HAZ, Guy, VE3VCF, Michel, VE3EMB, Paul, VE3NJS (standing), David, VE3ZZU and Maurice-André, VE3VIG. Charles is behind the camera taking the picture. Tx Charles!



**Malcolm Kendall, VE3BGD**

This is the first year that the Toronto Amateur Radio Club has taken part in the International Lighthouses and Lightships Weekend. We are now bitten by the bug and will be on the island for next year's event.

Toronto Island is a quick 10-minute ferry ride from downtown Toronto, but on the day we went to go to the island the local ferry was broken down. The only way on to the island was by using the Island Airport ferry, then clearing security, lining up behind a security escort vehicle and then following a float plane about to depart crossing the main runways, and then finally arriving on the park area of the island. It was an interesting experience crossing the tarmac passing a taxiing Bombardier aircraft to say the least!

We ran CW, PSK and Voice connected to a Dipole, Vertical and Magnetic Loop respectively and a Beam for the voice station. A total of 173 contacts were made, the most exciting was by voice with NZ0018 Castle Rock ZL2AS and NZ006 Piha Lighthouse ZL6LH. We looked after some 200 hundred visitors to the site and the stations – and the weather could not have been better.

Gibraltar Point Lighthouse marks the southwestern tip of the Toronto Islands. Originally constructed in 1808, the stone tower is Toronto's first lighthouse. The tower was originally 52 feet tall and housed a fixed white lamp. The tower was raised to 82 feet in 1832. A revolving white light was installed in 1878. An electric flashing light was installed in 1916-1917, when the station first received electricity. The current light (a fixed green light to identify it among the city lights) was installed in 1945. The light was transferred to a nearby skeleton tower in 1958, and the stone tower transferred to the Metropolitan Parks Department. The tower was renovated in 1961-1962.

The lighthouse is the site of an unsolved mystery. The first keeper, J.P. Rademuller, disappeared on January 2, 1815. Years later, a skeleton believed to be his was found near the lighthouse. To this day, Gibraltar Point is believed to be haunted.

*Many thanks to the City of Toronto and to Artscape Gibraltar Point.*

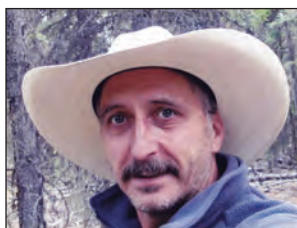


The following members took part in the weekend (from left in photo): Julio, VA3JCI, Luz, VA3LUZ, Ralph, VE3RWO, Gabriel, VA3CWT, Malcolm, VE3BGD, Dwayne, VE3WSH, Tim, VA3TMA and Dave, VA3TRK.

Not in the photo: Tibi, VA3DHJ, Richard, VA3RFR, Victor, VE3HEU, Doug, VE3HOY and Robert, VE3ZQL.

Guest Operators: Ward, VA3WGK and Paul, VA3PAW.





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# RANDOM THOUGHTS

## – BPSK31: THE DIGITAL AGE IS UPON US

### The Digital Age is...

upon us, and more and more new Amateurs and lapsed hams are embracing BPSK with glee.

It gives me pleasure to read the expressions of enthusiasm of recently retired ex-hams – now free of the daily work grind – who have come back to the airwaves with an obvious renewed interest in radio, thanks to Digital modes.

For a time it was not unusual for me to be the first contact for some Amateurs newly on digital.

For the most part, converts extol the virtues of DX on a mere handful of Watts, smaller, less obtrusive antennas, smaller rigs, less power consumption, ease of completing a QSO with macros, international QSOs with no language barrier, but mostly the marvel of it all.

Especially for those who have never used a keyboard, it marks a willingness to forge ahead and learn something new. This is what it is supposed to be all about.

I enjoyed those QSOs, as one must admire those who launch into something as initially alien as voiceless communications.

I once had a hearing impaired neighbour who would drop in a couple of times a day for assistance with his phone calls.

In the city, he used some device that enabled him to send text messages to other users of the system. But he had to be in town. I wonder how useful Digital modes could be for that segment of the population.

But progress always has a downside. More and more I have noticed a degradation of protocol on the digital portions of the bands. This, unfortunately, does happen often.

While I do make allowance for propagation differences which make some stations less visible on a poorly adjusted FFT, I do object to several practices that are becoming common. Ignoring QRL?, and the use of higher than necessary power with poorly adjusted sound cards, not waiting for the other QSO to end before hammering the target station, not respecting someone else's priority on a frequency, or simply just bowling over the competition with high wattage as if to beat the dog pile, are taking away from the initial enjoyment of the qualities and multiple benefits of going to the digital modes.

Some BPSK31 stations transmit with signals 10 or more times mode width limits. One very annoying habit, which has been my particular cross to bear, is being called repeatedly whilst busy on a QSO. Being a bit of a (blush) rare prefix may be partly to blame, as it seems to excite people. Unlike phone, where one can ask for a break but not obliterate the QSO, with BPSK if you park your signal on top of someone else, it scrambles the message. It is not uncommon for the offending station to stalk, i.e., follow you around if you QSY.

Not only does this obliterate several QSOs, it ruins a pleasant occasion for other hams. I now refuse to answer them.

One example of the low quality of operating practices on Digital modes was displayed during a sked with a friend in Central Canada. We got obliterated, but my friend told later me he had listened in on the interloper and discovered he/she was calling us on a different mode to ask us what mode we were on. That fully deserved a Duh! Similarly, the use of "10-4" lingo is showing up on Digital.

Lately, someone has been interfering with transmissions by sending out a high powered macro to chastise other Amateurs for transmitting their standard exchange signal reports and canned macros.

He/she roamed up and down the sub-band obliterating transmissions. Probably the same "radio owner" who was transmitting Pirate Radio type messages the month before.

I did encounter one odd habit that warmed my heart. An older Amateur, new to PSK but long a CW Op, was sending as if he was on CW. If he made an error a perfect string of eight letter Es appeared. His abbreviations were all CW. He only used lower case letters and there were few spaces between words. I was thoroughly entranced by this wonderful melding of the old and the new.

I could almost see how his mind was working. How very appropriate, I thought, for these times that are a-changing. It kinda makes the learning curve tolerable, doesn't it.



### CLUB CORNER, continued from page 36.

The membrane vibrates and a laser beam is used to cause an optical phase shift and then measure using optical techniques. It sounds quite advanced, and likely not to be in a radio near you anytime in the next year or two!

The Surrey ARC's newsletter's, "The Communicator", had an interesting review by John MacFarlane, VA7PX, on early Amateur Radio in the Arctic. Some of these Amateur operations were conducted by government weather reporters or airport radio operators. Many of the locations of these early stations are now no longer inhabited, but in their day they were needed to complete a network of reporting stations for the Canadian Government and other operators in the North. A comment in the article suggested that these early Amateur activities were greatly prized by stations in the south. Even today, activity, while less sporadic, is still prized by a great many operators.

I think that should be it. Thanks to all for reading my submissions over the years. I trust that our paths will cross in the time to come, hopefully on the air or otherwise.

May I take this opportunity to wish all a very Merry Christmas and a very Happy New Year!

Ralph, VE7OM

– 30 –

Ralph, it is hard to believe that it has been over eight years since you wrote your first Club Corner column in the May-June 2005 issue of TCA. It has been an absolute pleasure editing and reading your columns and I look forward to receiving articles on Summits On The Air and other topics in the future. – TCA Editor

# RAC CANADA WINTER CONTEST 2012 RESULTS

**Sam Ferris, VE5SF and Bart Ritchie, VE5CPU**

Participation in the 2012 edition of the Canada Winter Contest was up from all previous years with a total of 820 entries received. This is an all-time record for entries in the Canada Winter Contest. Conditions were somewhat disturbed this year as although participation was up, scores were generally lower. This year two new records were established in the Single Op All Bands CW (VE7JH at VE7UF) and the Single Op Single Band 160 metres (VE3MGY).

## **SINGLE OP ALL BANDS LOW POWER**

Sam Ferris, VE5SF, achieved 1st place this year with a score of 700,910. Sylva Katz, VE5ZX, captured 2nd place by scoring 610,020. Bill Maddock, N4ZI, captured 3rd place in the Winter Contest with a score of 338,520. Ed Henderson, VE4YU, took 4th place scoring 293,940, while Malcolm Timlick, VE4MG, using the VE4RAC call sign, took 5th with a score of 280,320.

## **SINGLE OP ALL BANDS HIGH POWER**

John Sluymmer, VE3EJ, captured the 1st place SOABHP, with a score of 1,315,788. Second place went to Lee Sawkins, VE7CC, with a score of 1,017,846. Victor Petcherkin, N8OO, placed 3rd with a score of 808,606. David Weiner, VE3BZ, joined the top scorers in 4th place scoring 676,676. Dave Cockrum, N5DO, captured 5th place in the category with a score of 370,500. Within the SOABHP category, Victor Petcherkin, N8OO, captured the Russ Coleston, VK4XA Memorial for the highest scoring single op foreign entrant with a score of 808,606.

## **SINGLE OP SINGLE BAND**

With a score of 97,504, Robert Nash, VE3KZ, won the overall SOSB crown this year using the 20m band. Mike Smith, VE9AA, took 2nd overall SOSB place with a score of 74,844 with his 20m band entry. Third place in the overall SOSB was taken by Yuri Onipko, VE3DZ, with 53,542 points on the 40m band. On a band-by-band breakdown, Brain Campbell, VE3MGY, took top band honours on 160m with a single band low power score of 25,296 and in doing so also established a new all-time record at a time when propagation conditions should have favoured the higher bands – a notable achievement. Martin Sloodweg, VE7ABR, took the 80m band honours using high power with a score of 12,618.

Yuri Onipko, VE3DZ, won 1st place in 40m with a score of 53,542 using high power from Ontario. As noted above Robert Nash, VE3KZ, took 1st place on 20m with a high power entry scoring 97,504. Adrian Stimpson, VE7NZ, took the honours for 15m band with a low power score of 22,016. The winner of the 10m SOSB category was Alan J Birch, G4NXG/M, with a low power score of 980. John Choo, VE7JRX, won the 6m band with a low power score of 10 points. In the 2012 contest there were no entrants in the 2m Single Op Single Band sub category.

## **SINGLE OP – QRP**

Once again this year, Doug Ferris, VA3DF, achieved 1st place in the SOABQRP category with a score of 154,876. Robert MacKenzie, VE3RKM, took 2nd place, up from 4th place last year with a score of 92,988. Bert Michaud, N4CW, took 3rd place with a score of 39,750. James Davidson, VA3WR, won 4th place this year with a QRP score of 39,302 ahead of Timothy Watson, KB1HNZ, in 5th scoring 29,350.

## **PLAQUE WINNERS**

### **Single Operator All Bands Low Power**

Sponsored by Contest Club Ontario

Sam Ferris, VE5SF

1,256 QSOs – 95 Multipliers – 700,910 Points

### **Single Operator All Bands High Power**

Sponsored by Radioworld

John Sluymmer, VE3EJ

2,342 QSOs – 114 Multipliers – 1,315,788 Points

### **Single Operator All Bands – QRP**

Sponsored by QRP Canada

Doug Ferris, VA3DF

405 QSOs – 62 Multipliers – 154,876 Points

### **Single Operator Single Band Any Authorized Power**

Sponsored by Elkel Products

Robert Nash, VE3KZ

1,065 QSOs – 22 Multipliers, 20 Metre Band – 97,504 Points

### **Single Operator All Bands CW**

Sponsored by the Maritime Contest Club

Gabor Horvath, VE7JH at VE7UF

1,386 QSOs – 54 Multipliers – 309,096 Points

### **Single Operator All Bands Phone**

Sponsored by the Saskatchewan Contest Club

Ed Richardson, VE4VT

1,694 QSOs – 51 Multipliers – 454,716 Points

### **Multi-Operator Single-Transmitter High Power**

Sponsored by Alfa Radio

VE6SV (Operators VE6SV and VE6RST)

1,627 QSOs – 115 Multipliers – 939,090 Points

### **Multi-Operator Single-Transmitter Low Power**

Tony Allsop VE3FTA Memorial

Sponsored by the Mississauga ARC

Koji Kimoto and Rebecca Kimoto, VA7KO

(Operators VA7KO, VA7BEC)

1,010 QSOs – 79 Multipliers – 432,288 Points

### **Multi-Operator Multi-Transmitter Any Authorized Power**

Sponsored by Radioworld

VE6RAC (Operators VE6JY, VA6DX(+sons Davyn, Brysen),

VA6MA, VA6MIS, VE6BF, VE6IM, VE6OH, VE6TCK,

VE6TR, VE6WQ, VE6BF, VE6TA at VE6JY)

4,610 QSOs – 118 Multipliers – 2,618,184 Points

### **Single Operator Foreign Entrant**

Russ Coleston, VK4XA Memorial

Sponsored by Alan Goodacre, VE3HX

Victor Petcherkin, N8OO

1,571 QSOs – 101 Multipliers – 808,606 Points

## **SINGLE OP – ALL BAND – CW**

Top honours for the category go to Gabor Horvath, VE7JH, at VE7UF with a new record high score of 309,096. Second place is awarded to Rick Williams, VE9HF, with a score 289,986.

Third place was taken by Victor Androsof, VA2WA, with a score of 240,922. This year, 4th place goes to Bud Mortenson, VA7ST, with a score of 190,146. Fifth place goes to Rudy Bakalov, VE3/N2WQ, with a score of 171,108.

## **SINGLE OP – ALL BAND – PHONE**

Yet again this year Ed Richardson, VE4V, claimed 1st place with a score of 454,716. Again this year 2nd place goes to Alan Swanick, VA6UK, with a score of 242,304. Jeff Hillman, N4WZ, took 3rd place with a score 199,620. Fourth place goes to Naizaire Simon, using the VO2RAC call sign, with a score of 167,872. Fifth place is awarded to Greg McCormick using the VY2RAC call sign with a score of 136,890.



## MULTI-OPERATOR SINGLE-TRANSMITTER HIGH POWER

Operators VE6SV and VE6RST at VE6SV captured 1st place in the category with a score of 939,090. Paul Newberry Jr, N4PN, from his station in the state of Georgia took 2nd place with a multi-single high power category with a score of 733,026. This year the operators at VE3JM (VA3NPL, VE3JM and VE3RM) took 3rd place with a score of 583,110.

## MULTI-OPERATOR SINGLE-TRANSMITTER LOW POWER

Once again this year Rebecca, VA7BEC and Koji Kimoto, VA7KO, at VA7KO, took top honours and the Tony Allsop, VE3FTA Memorial in the Multi-Single Low Power category with a score of 432,288. Again this year Greg Osmond, VA3GKO and Jean-Paul Leblanc, VE9BK, at VA3GKO, achieved 2nd place with a score of 427,076. Third place honours go to operators at the Mississauga Amateur Radio Club VE3MIS (VE3VE, VE3IMG, VE3CWU, VA3JK) with a score of 416,330.

## MULTI-OPERATOR MULTI-TRANSMITTER

Once again this year, operators at VE6RAC (VE6JY + sons Davyn & Brysen, VA6MA, VA6MIS, VE6BF, VE6IM, VE6OH, VE6TCK, VE6TR, VE6WQ, VE6BF and VE6TA at VE6JY) claimed top honours in the MM category, with a score of 2,618,184. This year 2nd place was captured by the operators of VE6AO (VE6CCL, VE6KC, VE6TC, VA6ANT, VE6GDS and VE6KBI) of the Calgary Amateur Radio Association with a score of 921,360. Operators VE3FJ, VE3FWA, VE3KAO, VE3MA, VE3NFR and VE3SSR at VE3YAA captured 3rd place in the category with a score of 729,622.

## WRAP UP

Your contest managers sincerely appreciate the increased use of Cabrillo-based log entries. Cabrillo files significantly reduce the workload associated with producing the contest results. Current versions of popular contest programs – such as CT, NA, Super Duper and TR – produce Cabrillo files that can be readily handled by new scoring software developed by VE5CPU. As in the past we will continue to accept paper logs and other electronic logging formats so it is easy for everyone to send in an entry. If you are submitting a paper log, we would appreciate, if possible, receiving summary sheets prepared in accordance with the format set out in the official rules and which provide a breakdown of VE, RAC, DX contact and a multiplier total. This will make compiling and checking of logs an easier and quicker process.

Thanks and congratulations to everyone for participating in the 2012 running of the Canada Winter Contest and good luck in 2013. Operator comments are available on the RAC website.

## CANADA WINTER CONTEST RECORDS AS OF DECEMBER 31, 2012

Call	Category	QSOs	Mult	Score	Year
VE6JY (op VE5MX)	SO-AB-HP	1676	129	1,344,180	2000
VX5SF (op VE5SF)	SOABLP	1510	109	1,002,800	2001
VE3JC	SO-AB-QRP	399	81	271,674	2001
VE3YOC	SO-SB-144MHz	82	2	1,464	1995
VY2SS	SO-SB-50 MHz	382	10	10,720	2001
ZF2NT	SO-SB-28 MHz	1127	23	100,832	1998
VE3KZ	SO-SB-21 MHz	873	20	75,040	1997
VY2SS	SO-SB-14 MHz	1015	23	110,538	2011
VA3MO	SO-SB-7 MHz	525	22	72,644	2001
VE3BY	SO-SB-3.5 MHz	537	22	104,016	1997
VE3MGY	SO-SB-1.8 MHz	382	17	25,296	2012
VE7JH	SO-AB-CW	1386	54	309,096	2012
VE4VT	SO-AB-PH	1498	60	479,880	2011
VX6JY	MS*	2092	132	1,476,024	2001
VA6AO	MO-ST-HP	1560	110	885,060	2003
VA7BEC	MO-ST-LP	996	88	443,168	2011
VE6RAC (at VE6JY)	MM	5495	133	3,316,488	2011

\* Category superseded in Winter 2003

## MULTI-OPERATOR DETAILS:

AA0AW: AA0AW  
AA3B: AA3B  
AA4CF: AA4CF  
AB1QP: AB1QP  
AC4YD: AC4YD  
AD2TM: AD2TM  
AE1T: AE1T  
AF4RK: AF4RK  
CR6P: CT1DWT, CT1HIX, CT2HKN, CT2IQK, CT5KHX  
DL1EAL: DL1EAL  
EA4DUT: EA4DUT  
G3ORY: G3ORY  
G4AFJ: G4AFJ  
GM4WZG: GM4WZG  
JA7RQK: JA7RQK  
JS1IFK: JS1IFK  
KD0S: KD0S WD0T  
K0JPL: K0JPL  
K0MPH: K0MPH  
K0RC: K0RC  
K0UK: K0UK  
K1JB: K1JB  
K3FH: K3FH  
K3MD: K3MD  
K3OQ: K3OQ  
K9CT: K9CT  
KG6N: KG6N  
KK4EIR: KK4EIR  
KN3A: KN3A  
KX7L: KX7L  
LZ1QZ: LZ1QZ  
N0BK: N0BK  
N1EN: N1EN  
N2SO: N2SO  
N3AFT: N3AFT  
N3NZ: N3NZ  
N3QE: N3QE  
N3RC: N3RC  
N4PN: N4PN  
N8AGU: N8AGU + Internet  
N9KY: N9KY  
N9VPV: N9VPV  
NK3Y: NK3Y  
OH2CI: OH2CI

OK2SG: OK2SG  
OM3TPN: OM3TPN  
PA3EVY: PA3EVY  
RK9CYA: RK9CYA  
S59T: S59T  
SP1MHZ: SP1MHZ  
SP9KJU: Hubert, SP9MDY  
SV1JGX: SV1JGX  
VE1OP: VE1OP  
VE1RAC: VE1AL (CW) & VE1BVD (phone)  
VE1ZA: VE1ZA  
VE2CJR: VE2CJR  
VE2EBK: VE2EBK  
VA2EK: VA2EK - VE2BWL  
VA2RAC: VA2SG, VA2WAG, VA2DXZ, VE2DRO  
VE2FK: VE2FK  
VE2NGH: VE2NGH, VA2UTC, VE2DDZ, VE2OFH  
VE2SG: VE2SG  
VA3GKO: VA3GKO, VE9BK  
VA3RAC: VA3VXN, VA3DGN, VE3BBM, VE3KL, VE3XRA, VE3FFK, VE3ZTU, VE3YTZ, VE3TLY  
VA3SK: VA3SK, VA3MW  
VE3AIR: VE3AIR  
VE3DC: VE3BK  
VE3DV: VE3DV, VA3TVW, VA3CDU  
VE3JM: VA3NPL, VE3JM, VE3RM  
VE3MIS: VE3VE, VE3IMG, VE3CWU, VA3JK  
VE3SWA: VA3CBE, VA3MP, VE3MF, VE3OAV, VE3USP  
VE3XAT: VE3XAT  
VE3YAA: VE3FJ, VE3FWA, VE3KAO, VE3MA, VE3NFR, VE3SSR  
CF5LF: VA5LF  
VE5MX: VE5MX  
VE5RAC: VE5CJB, VE5FN, VE5WI  
VA6NJK: VA6NJK  
VE6AO: VE6CCL, VE6KC, VE6TC  
VA6ANT, VE6GDS, VE6KBI  
VE6CMV: VE6CMV  
VE6KD: VA6AWS, VE6EFR, VE6STE, VE6HEP, VE6AMT, VE6KD

VE6RAC: VA6DX (+sons Davyn and Brysen) VA6MA, VA6MIS, VE6BF, VE6IM, VE6JY, VE6OH, VE6TCK, VE6TR, VE6WQ, VE6BF, VE6TA @ VE6JY  
VE6SV: VE6SV, VE6RST  
VA7KO: VA7KO, VA7BEC  
VE7CA: VE7CA  
VE7DB: VA7NX, VE7GM, VE7OM, VE7SM  
VE7FI: VE7FI, VE7XY  
VE7LFE: VE7LFE, VA7ZJR, VE7QJ, VA7VX, VA7BZ, VE7EAR  
VE7NA: VE7JLO, VE7GDE, VE7LSE, VA7DEO, VE7GOA, VE7DVJ, VE7IAD, VE7FCO & VE7BGP  
VE7RAC: VA7QB, VA7XB, VE7AXU, VE7GM, VE7IO, VE7JT, VE7OFH, VE7WJ  
VE7RCE: VE7TU, VA7KMG, VA7DGP  
VE7TK: VE7TK  
VE7UT: VA7AQD, VE7ALN, VE7DNZ, VE7PR, VE7WWW  
VE8RAC: VE8WD Dave Harnum (Student)  
CG9EX: CG9EX  
VE9CRM: VE9BEL, VE9MOU, VE9RMO, VE9RLW, VE9SAP, VE9BRY, VE9SDY  
VE9ML: VE9ML  
VE9MSR: VE9LMN, VE9ML, VE9CX, VE9MA  
VE9NC: VE9NC  
VE9OA: VE9BWK, VE9OA  
VE9RAC: VE9MY, VE9DX  
VO1KVT: VO1KVT  
W0AD: W0AD  
W1CSM: W1CSM N4ADC  
W1EBI: W1EBI  
W1HY: W1HY  
W1UE: W1UE  
W2DZ: W2DZ  
W2RDS: W2RDS  
W6AAN: W6AAN  
W9ILY: W9ILY  
W9LHG: W9LHG  
WB0TEV: WB0TEV  
WM5H: WM5H  
WO7V: WO7V  
XE2AU: XE2AU

# 2012 CANADA WINTER – LINE LISTING BY CATEGORY SINGLE OPERATOR ALL BAND LOW POWER

Call	CDN	RAC	DX	MLT	QSO	Score
VE5SF	534	33	689	95	1256	700910**
VE5ZX	459	54	554	90	1067	610020
N4ZI	288	31	265	84	584	338520*
VE4YU	315	28	275	69	618	293940*
VE4RAC	323	16	415	64	754	280320
VE7CV	284	33	143	74	460	280164*
VA3KAI	203	28	161	71	392	206752*
VE3RCN	190	25	223	72	438	204912
VE3TW	183	26	199	63	408	173124
VE3GFN	180	25	265	58	470	164140
VE2AWR	149	18	243	55	410	128480*
VE7YU	149	21	280	52	450	128440
WN6K	184	11	286	46	481	121072*
WA2JQK	118	25	58	56	201	100576*
VO1GO	121	19	149	53	289	100064*
WB8JUI	111	24	161	49	296	93688*
VA3EC	123	18	370	38	511	88540
VE7BC	131	12	191	44	334	85008
VE5KO	149	15	138	41	302	84706
VE3JI	101	18	70	56	189	84560
K7IA	100	16	145	51	261	82110*
VE5UO	132	13	207	41	352	81754
VE2ZT	125	24	73	43	222	80668
KS4X	97	23	12	55	132	79970
KB3LIX	95	22	45	51	162	75480*
WA0WWW	95	19	81	49	195	73108*
VA2RF	129	20	95	37	244	69560
W4UT	99	21	16	47	136	67774
VE6SQ	103	12	132	43	247	65962*
VE3FZ	78	18	54	50	150	62400
K4DJ	94	16	91	43	201	62006
VE3ZS	88	18	73	44	179	60984
N0UV	87	21	5	42	113	54600*
W4WWQ	82	14	30	46	126	53360
VE3CV	72	14	52	47	138	51888
W9GO	92	13	163	34	268	51204*
VO1BQ	75	12	162	36	249	47304
VE5AAD	120	7	85	30	212	45300
ND2T	88	11	135	28	234	38360
N7VS	63	16	53	36	132	38016
W8DW	69	14	62	34	145	37196
W3TB	55	18	46	37	119	37074
NF8M	61	12	79	35	152	35280
N4UEZ	69	14	31	31	114	31992
WW7D	61	8	66	33	135	29766
W4UEF	58	13	26	33	97	29436
N2JJ	47	13	42	31	102	25234
AC8AG	57	11	7	28	75	22512
VE4RON	54	14	22	24	90	20736
WA1DRQ	38	14	20	27	72	18900*
KC4WQ	40	10	0	30	50	18000
K8MU	39	7	49	26	95	16328
VE3EDX	38	11	35	24	84	16080
UU2CW	43	2	219	16	264	14528*
KD5J	29	10	17	26	56	13624
W1PR	50	6	13	20	69	12920
K7XV	32	8	15	25	55	12750
VE3VSM	39	6	38	19	83	11134
VE1RR	31	10	3	20	44	10320*
W0PAN/7	31	8	12	19	51	9386
N1NN	46	4	80	13	130	9100
VE3DMR	23	13	6	18	42	9036
DL5ZBA	39	4	30	17	73	9010*
G4ERW	33	2	72	17	107	8738*
W3VKD	27	8	8	19	43	8474
DK4WF	30	3	27	16	60	6624
VE9MA	56	4	39	9	99	6462
HC2UA	34	3	32	13	69	6032*
F5PAL	29	2	50	14	81	6020*
DL1NKS	24	1	55	14	80	5180
VA7GAP	26	5	19	12	50	4776
VE1DFG	30	5	1	11	36	4422*
KE6QR	19	5	11	13	35	4056
VE9WH	16	5	1	15	22	3930
K6MI	17	3	0	11	20	2530
UA1CUR	13	1	65	9	79	2520*
NV9X	14	2	8	11	24	2156
SP8CGU	17	0	30	9	47	2070*
UA6JQ	11	1	82	7	94	2058
EI2KA	11	2	20	10	33	1900*
VA5RI	15	3	12	8	30	1872
VE4UR	12	3	6	9	21	1728
K6TIG	13	2	2	9	17	1566
ER2RM	7	1	16	5	24	610*
EA2SS	8	0	9	4	17	392*
DL3YDY/P	0	0	4	1	4	8

# SINGLE OPERATOR ALL BAND HIGH POWER

Call	CDN	RAC	DX	MLT	QSO	Score
VE3EJ	747	49	1546	114	2342	1315788**
VE7CC	663	51	1116	103	1830	1017846*
N8OO	509	44	1018	101	1571	808606*
VE3BZ	494	44	808	91	1346	676676
N5DO	344	32	335	78	711	370500
KA6BIM	336	33	182	84	551	368256*
K4BAI	303	34	476	78	813	363636*
K9YC	359	30	288	74	677	352684*
W0OR	283	31	434	70	748	302260*
VA7OM	271	28	491	70	790	297640
VE3CX	275	25	376	71	676	284142
VE6BMX	241	25	296	68	562	238136*
VA3AR	203	14	464	56	681	181328
VY2LI	224	7	366	54	597	168048*
CF5LF	196	15	650	47	861	167320*
KY7M	184	15	171	54	370	134028
WD0ECO	154	21	194	52	369	122096
KF7DX	145	24	61	46	230	94392
VE7WO	156	9	433	36	598	93816
W7FI	125	22	4	54	151	91692
VO1UL	116	26	7	49	149	83006*
W6SX	146	5	307	34	458	73916
VE3CES	106	15	83	41	204	62566
VA3KA	57	26	35	44	118	51040
W9IU	77	13	87	41	177	49364*
RW0CN	86	10	233	32	329	48832*
VE3DC	102	6	93	34	201	45084
N6QQ	75	16	17	35	108	38640
KF7PBM	78	11	55	33	144	36630
9A1AA	61	14	84	34	159	35972*
KE9I	50	11	93	36	154	32616
K7JQ	78	9	115	26	202	30940
VA7OA	59	11	4	31	74	25358
VA6MM	47	10	26	26	83	18772
W0BH	45	5	60	25	110	16750
W4NBS	51	6	23	24	80	16224
K6III	34	11	33	23	78	14398
WA8KAN	36	8	68	21	112	13776*
N3KN	46	5	0	23	51	12880
N6GP	35	7	41	19	83	10868
UA1ANA	41	3	84	14	128	8932*
K6UW	34	4	68	15	106	8340
WA0MHJ	33	5	36	14	74	7028
OK1KZ	22	0	99	13	121	5434*
CG3HX	0	0	85	21	85	3570
NI7R	20	2	6	12	28	3024
YO9HP	14	3	0	13	17	2600*
JH2RMU	13	6	0	9	19	2250*
JF2FIU	12	3	12	6	27	1224
UT7CA	10	0	12	6	22	744*

# MULTI-OP SINGLE TRANSMITTER LOW POWER

Call	CDN	RAC	DX	MLT	QSO	Score
VA7KO	364	30	616	79	1010	432288**
VA3GKO	339	43	358	86	740	427076*
VE3MIS	284	44	589	85	917	416330
VE2EBK	288	30	282	60	600	242640*
VE9OA	192	24	375	59	591	185850*
VA2RAC	204	21	309	58	534	178524
VE1ZA	165	15	357	56	537	149184*
K0JPL	128	24	116	62	268	123504*
VE1OP	146	17	416	41	579	107912
VA2EK	142	21	177	43	340	94342
VE7NA	122	11	111	52	244	86424
VE7UT	116	17	69	50	202	81900
VE3AIR	137	15	76	37	228	67414
VE8RAC	154	8	164	22	326	44616*
W6AAN	69	13	23	42	105	41832*
VE9MSR	109	9	109	28	227	41664
VE7CA	108	6	291	23	405	40986
VE9CRM	85	16	52	29	153	36946
AE1T	68	16	51	32	135	35264*
VE7LFE	135	7	121	20	263	34640
K0MPH	60	14	58	33	132	32868
N1EN	55	7	36	35	98	26670
VE7FI	105	8	92	19	205	26486
VE2FK	62	7	154	20	223	21360
VE9NC	67	9	12	24	88	20976
VE7DB	62	8	53	20	123	17720



N9KY	26	13	4	31	43	16368*
K0UK	54	5	48	22	107	16192
KX7L	45	9	0	25	54	15750*
AC4YD	52	10	25	19	87	14630
KK4EIR	28	12	3	27	43	14202
N2SO	45	6	53	21	104	14196*
W2DZ	37	9	22	23	68	13662
KG6N	38	9	32	17	79	10608*
W0AD	30	8	2	19	40	8816
PA3EVY	20	2	73	13	95	5018*
N3NZ	24	6	1	13	31	4706
XE2AU	17	6	12	14	35	4396*
K3FH	19	2	19	12	40	3216
SP1MHZ	24	4	42	7	70	2828*
VE7RCE	14	3	5	10	22	2100
W9ILY	11	3	10	11	24	2090*
SV1JGX	12	0	26	10	38	1720*
DL1EAL	13	0	24	9	37	1602*
AD2TM	11	3	0	6	14	1020
W07V	14	1	5	5	20	850
N9VPV	6	3	0	6	9	720
N3AFT	6	2	1	7	9	714
JS1IFK	10	1	9	5	20	690*
JA7RQK	9	1	2	5	12	570
OM3TPN	8	0	27	3	35	402*
OH2CI	6	0	2	3	8	192*
GM4WZG	2	0	78	1	80	176*
KN3A	5	0	9	1	14	68
CG9EX	2	0	0	2	2	40
SP9KJU	2	1	0	1	3	40

#### MULTI-OP SINGLE TRANSMITTER HIGH POWER

Call	CDN	RAC	DX	MLT	QSO	Score
VE6SV	515	44	1068	115	1627	939090**
N4PN	540	46	781	93	1367	733026*
VE3JM	370	42	865	93	1277	583110*
VA3SK	282	28	327	82	637	330788
WB0TEV	303	32	170	82	505	328820*
VE2NGH	253	20	618	39	891	162474*
AA3B	192	21	524	47	737	159236*
VE3DV	228	26	261	47	515	156134
G3ORY	182	28	161	54	371	145908*
VA6NJK	218	27	34	45	279	125460
VO1KVT	220	23	193	37	436	112702*
W2RDS	101	28	113	56	242	100576*
VE9ML	176	11	116	45	303	99540*
NK3Y	117	24	48	49	189	85554
VE2SG	138	10	436	34	584	83368
W9LHG	162	17	263	32	442	79552*
AA4CF	135	16	233	37	384	79032
VE3XAT	80	19	69	50	168	65900
K0RC	86	14	0	44	100	50160
W1EBI	66	16	48	45	130	48420*
VE6CMV	122	9	124	27	255	44496
W1CSM	70	14	95	36	179	42120
N3RC	70	12	54	38	136	39824*
K9CT	55	11	0	34	66	26180*
AA0AW	65	8	58	27	131	25002
CR6P	89	7	83	20	179	23920*
VE2CJR	80	8	15	24	103	23760
W1HY	49	13	40	27	102	22410
VE7TK	32	16	1	32	49	20544*
N0BK	38	12	0	26	50	16120
W1UE	42	5	78	22	125	14872
OK2SG	44	5	34	19	83	11552*
G4AFJ	47	7	6	15	60	9330
AB1QP	19	7	20	19	46	7030
K1JB	24	3	19	14	46	4732
N3QE	32	4	4	11	40	4488
AF4RK	27	3	35	11	65	4400
WM5H	16	3	17	12	36	3048
K3MD	16	3	38	10	57	2960
K3OQ	8	3	13	11	24	1826
N8AGU	10	4	0	7	14	1260*
S59T	6	1	43	5	50	830*
EA4DUT	7	0	1	7	8	504*
LZ1QZ	5	0	30	3	35	330*
RK9CYA	0	0	60	1	60	120*

#### MULTI OPERATOR MULTI TRANSMITTER

Call	CDN	RAC	DX	MLT	QSO	Score
VE6RAC	1486	60	3064	118	4610	2618184**
VE6AO	619	32	1820	88	2471	921360
VE3YAA	486	44	1229	89	1759	729622*
VE5RAC	608	30	1020	76	1658	662720*
VE5MX	374	46	671	91	1091	546182
VE6KD	674	28	967	58	1669	535572
VE7RAC	525	26	617	62	1168	434248*
VE3SWA	321	45	648	76	1014	410856
VE9RAC	324	35	715	75	1074	402750*
VE1RAC	360	30	646	62	1036	340504*
VA3RAC	346	22	599	64	967	326272
KD0S	199	14	266	54	479	151308*

#### SINGLE OP ALL BAND CW – ANY POWER

Call	CDN	RAC	DX	MLT	QSO	Score
VE7JH	315	24	1047	54	1386	309096**
VE9HF	283	23	1198	51	1504	289986*
VA2WA	274	16	1033	47	1323	240922*
VA7ST	250	20	761	43	1031	190146
VE3/N2WQ	190	11	977	42	1178	171108*
VE3KI	210	22	499	47	731	166286
K4LTA	202	15	379	43	596	132354*
VE7JKZ	196	15	499	39	710	127062
VE3UTT	152	12	638	40	802	121440
N4BP	201	8	574	31	783	102858
W4YE	145	22	193	41	360	93316
K6RB	165	14	291	37	470	92944*
K4ORD	132	16	213	43	361	88838
VA3ATT	156	16	280	36	452	87840
VE5KS	151	12	321	36	484	86112*
W6AEA	155	9	376	34	540	84388*
K5LH	154	17	193	37	364	83842*
NB1N	130	13	351	34	494	76908*
NA8V	125	16	211	38	352	75696*
VE3FGU	119	15	210	38	344	72580
VE6LB	109	11	221	36	341	63072*
N5KWN	138	7	255	31	400	62930
WK2T	111	9	196	35	316	58870*
N4ZZ	133	11	357	25	501	56600
W2RR	108	12	164	34	284	56032
K0VBU	118	10	181	32	309	55744*
NS9I	93	14	160	31	267	47430*
K8MP	88	12	257	29	357	47386
VE6GJ	96	15	101	32	212	46784
IQ2CJ	94	7	338	26	439	45656*
VE3FH	95	9	121	32	225	43904
N6XI	90	8	150	31	248	42160
N4TB	96	13	166	27	275	41904
NW2K	79	13	183	29	275	41064
K1BV	71	9	326	24	406	37008
N9AUG	81	10	111	30	202	36960
VY2OX	84	7	249	25	340	36950*
K8JQ	93	7	174	26	274	36868
W2SA	88	9	73	29	170	34974
WG0M	87	12	116	26	215	34892
N5AW	76	9	128	29	213	34684
NA4K	79	13	138	25	230	33150
W9OA/9	66	11	87	31	164	32674
N3KR	71	11	145	26	227	31720*
DJ5QV	57	6	247	26	310	30784*
K4UK	70	12	8	32	90	30592
OK7FL	73	7	286	21	366	30282*
K5QQ	81	8	74	27	163	30186
EA5YU	71	8	246	22	325	29964*
NG7Z	70	11	159	23	240	28474
N4VV	66	7	42	31	115	27404
W1UJ	78	6	153	22	237	26532
VE3RIA	74	4	232	20	310	25680
VA2EU	46	9	108	29	163	24824
W3DQN/5	59	10	72	26	141	24284
UA5C	63	9	173	21	245	24276*
W2LE	65	10	125	22	200	24200
VE3LC	63	7	104	24	174	23472
K2NV	54	6	151	24	211	23088
VE1RSM	66	6	158	21	230	23016*
W1END	57	10	109	23	176	22724
K9JWI	58	8	74	25	140	22200
W7GB	61	9	0	26	70	20540
VE3SB	55	7	63	25	125	20400
SP9MZH	52	6	216	18	274	19296*
AC5K	59	7	16	25	82	19050
K4RO	55	6	69	23	130	18584
G3LIK	47	5	218	18	270	18108*
UR7GO	49	2	208	18	259	17028*

VA3FN	45	5	64	25	114	16950	EA8ASE	6	2	14	8	22	1024
VE7NI	50	8	76	20	134	16240	RT9X	9	1	45	5	55	1000*
SP9GR	48	4	196	17	248	16184	RN2FQ	11	0	28	6	39	996
WA3AAN	56	8	0	22	64	15840	SQ5JUP	10	1	8	7	19	952
G3IAF	54	5	24	22	83	15136	OZ1DGQ	11	0	22	6	33	924
W5ASP	60	7	53	17	120	14382	OZ8SW	8	0	34	6	42	888
N1IW	56	7	71	16	134	13472	JA3NOJ	9	1	0	8	10	880*
KB7N	40	4	47	23	91	13202	TA2ZF	8	0	47	5	55	870*
DM3XI	51	2	55	20	108	13200	EU6AA	5	0	60	5	65	850
IK0GDG	48	5	256	12	309	13104	JA3JM	9	2	18	5	29	830
AB1J	50	6	120	15	176	12900	EA4GB	8	1	27	5	36	770
AI6II	52	4	21	20	77	12840	ON3ND	9	0	32	5	41	770*
YO2GL	50	3	76	18	129	12816*	LZ1IKY	7	0	37	5	44	720
K6DGW	46	7	0	21	53	12600	UT0RM	8	1	38	4	47	704
G4DBW	33	3	190	16	226	12320	JA1CP	10	1	10	5	21	700
LU8QT	42	4	113	16	159	11616*	G4SGI	10	0	34	4	44	672
YL2BJ	37	5	165	14	207	11200*	DM3RB	11	0	8	5	19	630
WA1LWS	35	5	43	20	83	10720	OK2KFK	9	1	49	3	59	624
OK8DD	34	1	142	16	177	10304	G3ZRJ	10	1	0	5	11	600
WA1Z	30	5	67	19	102	10146	IZ1DXS	7	1	12	5	20	570
VE3QO	36	5	65	17	106	10030	RW3VA	6	0	99	2	105	516
KI0I	51	4	36	15	91	9930	JR2AWS	9	1	8	4	18	504
YO2AQO	34	4	166	13	204	9776	DM5JL	7	0	15	5	22	500
W1CCE	34	6	43	17	83	9282	W4BCG	8	0	8	5	16	480
W6GMT	44	5	60	14	109	9240	Z35F	6	0	50	3	56	480*
SE6E	29	4	143	14	176	9184*	UA6GF	5	0	53	3	58	468
EA8/PD1DX	26	3	99	17	128	8806*	ZA1G	5	0	44	3	49	414*
NM5M	44	5	65	13	114	8710*	K6CSL	8	0	11	4	19	408
WC7Q	36	3	50	16	89	8320	JP1HUJ	6	1	3	4	10	344
VE5BCS	34	3	14	19	51	8132	OK1FCA	4	0	37	3	41	342
KG4CUY	36	4	0	18	40	7920	DJ3CS	7	0	13	3	20	288
SM5CSS	24	1	179	12	204	7416	RA3BQ	5	0	5	4	10	240
OK2QX	30	2	84	14	116	7112	UX1IB	3	0	25	3	28	240
TF3DC	32	5	43	14	80	7084*	YO5CDF	2	0	49	2	51	236
SI5Y	27	3	182	10	212	6940	YO7CVL	4	0	17	3	21	222
K1DM	42	2	33	13	77	6838	US0UX	3	0	20	3	23	210
N2CJ	23	3	24	19	50	6422	DL5CL	6	0	4	3	10	204
LZ2PS	35	1	0	16	36	5920*	UA0C	4	1	2	3	7	192
YL2TB	28	3	73	11	104	5346	UN5C	1	0	78	1	79	166*
G3GLL	28	4	58	11	90	5236	JS3CGH	5	0	1	3	6	156
VE3EY	24	2	88	11	114	5016	JG1SWV	1	2	0	3	3	150
VA1GE	29	3	1	14	33	4928	JH8CXW	3	1	0	3	4	150
YU1FG	20	1	89	12	110	4776*	JJ5HUD	3	1	0	3	4	150
EA1WX	24	2	28	13	54	4368	N1SZ	3	1	0	3	4	150
KK4CIS	30	0	42	11	72	4224	JA0VTK	4	1	6	2	11	144
DF6RI	24	1	81	10	106	4220	UY7IS	3	0	6	3	9	126
OK4DZ	22	1	36	13	59	4056	HA7JQK	2	0	19	2	21	116
DK0SU	22	5	23	11	50	4026	OH2KM	1	0	47	1	48	104
UW1M	27	1	53	10	81	3960	UR4LIN	3	0	31	1	34	92
SM0A	23	3	63	9	89	3744	RA1ZC	1	0	40	1	41	90
SP5GDY	26	3	43	9	72	3654	YO3GNF	1	0	35	1	36	80
VE3OM	17	3	43	10	63	3160	IK2AUK	2	0	9	2	11	76
OM8LA	20	1	115	7	136	3150*	PC3H	2	0	6	2	8	64
F8DGY	20	0	87	8	107	2992*	RZ9OF	0	0	23	1	23	46
DJ2IA	14	3	21	12	38	2904	IT9VDQ	1	0	3	1	4	16
UA2FL	17	2	133	6	152	2856*	<b>SINGLE OP ALL BAND PHONE – ANY POWER</b>						
W7WHY	14	5	20	10	39	2800	<b>Call</b>	<b>CDN</b>	<b>RAC</b>	<b>DX</b>	<b>MLT</b>	<b>QSO</b>	<b>Score</b>
K1SXD	11	5	2	13	18	2782	VE4VT	619	32	1043	51	1694	454716**
DL4VQ	20	0	37	10	57	2740	VA6UK	356	18	564	48	938	242304*
G3RSD	17	1	28	11	46	2706	N4WZ	349	17	303	45	669	199620*
UR5MM	13	1	85	8	99	2560	VO2RAC	385	16	538	32	939	167872*
DL5SVB	14	2	52	9	68	2556	VY2RAC	251	18	320	39	589	136890*
WW2DDM	3	9	1	12	13	2544	VO1JNS	274	19	328	34	621	128384
OZ8PG	19	2	23	9	44	2484*	VE5FX	237	17	149	40	403	120320*
DL5YL	18	2	43	8	63	2448	WD7K	191	25	107	44	323	115456*
G0IBN	18	1	33	9	52	2394	VE3NB	165	32	86	44	283	108328*
N2ED	17	0	83	7	100	2352	K5DHY	193	28	42	42	263	108108*
SM7BHM	19	0	20	10	39	2300	VE3DVY	197	23	190	38	410	106780
M0CFW	12	0	67	9	79	2286	VE7SNC	200	17	256	37	473	105524*
LY2N	20	1	32	8	53	2272*	W9QL	193	25	131	38	349	102296*
HA6NL	12	0	102	7	114	2268*	CO2GG	237	18	165	33	420	100980*
SQ9FMU	20	1	31	8	52	2256	VA4HZ	184	25	109	39	318	99762
VE3VCF	18	2	29	8	49	2224	VA3XH	171	22	107	40	300	94560
PA0JNH	14	0	40	10	54	2200*	VE1ZD	208	14	290	30	512	88200*
EW8OW	16	1	83	6	100	2076*	VE3VZ	158	19	111	37	288	80734
C4Z	9	1	93	7	103	2072*	VE3NLS	167	22	203	32	392	80512
EW8OM	8	0	128	5	136	1680	VE8GER	245	13	294	24	552	79152*
IV3JCC	13	2	26	7	41	1554	VE3TU	159	17	105	33	281	70620
DL2NBY	10	0	57	7	67	1498	VE3RB	126	22	68	38	216	69768
NG2D	13	2	21	7	36	1484	VA6AK	136	24	32	36	192	68544
RV3ZN	7	0	103	5	110	1380	VE7XS	148	15	117	33	280	66462
N2WN	13	2	9	7	24	1316	N0XT	152	16	47	34	215	65756*
DL8MAS	10	0	53	6	63	1236	VE6EC	132	16	64	37	212	65416
WU9D	6	4	14	7	24	1176	VA3WU	107	17	159	35	283	60480
F8AEE	6	0	112	4	118	1136	VE3XRC	127	23	18	33	168	58278
SA1A	12	1	17	6	30	1044							



VA3IG	100	20	50	38	170	57000	VA3DBT	14	6	11	12	31	3384
VA7IR	159	8	174	26	341	54548	VE3YX	17	5	4	12	26	3336
VE7GYR	120	16	64	32	200	52736	WB5WAJ	22	3	5	11	30	3190
VA2CO	103	20	61	33	184	51216*	SP9NWN	21	3	2	11	26	3014
VE1PEW	128	11	48	31	187	49476	AD7OG	18	4	0	11	22	2860
VA2QR	137	12	104	27	253	49086	KF5QEW	14	4	17	11	35	2794
VA3KGB	81	20	33	38	134	48488	DL5IC	17	4	0	11	21	2750
VE9JT	111	17	30	32	158	48320*	JA8ECS	12	6	5	10	23	2500*
VE2HIT	114	14	41	32	169	48064	DL9HB	21	2	8	9	31	2394
VA3MOD	96	13	57	34	166	45356	VE7SJW	14	4	9	10	27	2380
VY2GM	90	21	40	32	151	44800	N7AME	7	5	4	11	16	1958
AC0DQ	95	22	1	32	118	44544	K5WRN	17	2	3	9	22	1944
VE1SQ	98	17	31	29	146	40078	NG4L	12	3	0	9	15	1620
VY1RAC	197	8	87	16	292	36864*	JA7BEW	15	3	2	7	20	1498
VE3IQZ	69	17	21	33	107	35376	K0RRP	14	2	0	8	16	1440
VE3SKP	77	14	42	30	133	34020	KE4QCM	10	2	0	10	12	1400
NOUJJ	79	18	23	28	120	33488	K2AF	5	5	1	8	11	1216
VE3WMJ	62	18	21	31	101	31682	VE3EEU	79	12	21	1	112	1072
VO1DJT	93	13	30	25	136	31250	ON3AR	13	1	1	7	15	1064*
VE3AD	66	20	18	28	104	30688	W2AJW	10	0	0	7	10	700
VA3NW	74	11	29	30	114	30540	KK6L	5	3	3	6	11	696
NW5Q	84	11	27	27	122	30078	PG1R	10	0	8	6	18	696*
VE3NQM	67	18	0	29	85	29870	IK3XTY	7	2	12	5	21	670*
KF0F	69	14	0	28	83	27160	N8ZAK	7	1	0	7	8	630
AC5O	84	9	53	24	146	27024	R7NP	8	0	11	5	19	510*
N7ZO	70	13	18	26	101	25896	VE3AJ	5	2	0	4	7	360
K4CTL	55	16	4	29	75	25462	RW1CW	5	1	5	4	11	320
KE5ISO	68	12	35	25	115	24750*	M0TQR	7	0	4	4	11	312*
K7XE	83	11	0	22	94	23100*	PA0JHS	7	1	3	3	11	288
VE7HLW	66	10	23	25	99	22650	KJ6TTR	5	0	1	5	6	260
VE6KAD	75	9	41	22	125	22264	KC9UHH	4	1	2	3	7	192
VE6LE	44	16	0	29	60	22040	KC7H	0	3	1	1	4	62
CM5FZ	68	9	81	21	158	21462	YO9GJY	2	0	5	2	7	60*
VE9REB	72	9	15	23	96	21390	HB9RJG	1	0	2	1	3	14*
VE3XEM	55	13	37	24	105	21216	IC8POF	1	0	0	1	1	10
VE3MEW	47	11	32	28	90	21112							
EA7KB	80	11	29	19	120	20482*	SINGLE OPERATOR ALL BAND QRP						
VE6KG	45	9	12	28	66	18312	Call	CDN	RAC	DX	MLT	QSO	Score
KC2QJB	35	16	9	26	60	17888*	VA3DF	148	28	229	62	405	154876**
VE6SPS	63	6	31	22	100	17864	VA3RKM	103	23	116	54	242	92988
NX8G/5	51	10	28	23	89	17618*	N4CW	106	13	135	25	254	39750*
VA3BXG	40	14	12	25	66	17600	VA3WR	55	14	42	43	111	39302
VE3HED/W4	27	15	0	29	42	16530	KB1HNZ	83	11	62	25	156	29350*
KE5FXE	64	6	9	21	79	16338	WA8REI	69	11	92	25	172	27350*
KF7UXC	50	9	23	22	82	15972	VE3PYG	39	16	56	33	111	27126
VE2KCA	49	9	76	19	134	15618	KE0G	71	8	2	23	81	20102*
VE4TCH	48	11	21	21	80	15582	VE7FE	45	7	27	25	79	16100*
AD4RE	42	11	10	23	63	15180	N9BT	49	6	39	23	94	15824*
AG6AY	49	9	3	22	61	14872	N8XX	46	8	58	20	112	14720
VE7GPK	39	11	13	23	63	14628	VA3PCJ	39	8	12	22	59	12628
KD7ZLF	50	10	14	19	74	13832	KT7E	34	11	0	18	45	10080*
KD0FW	43	10	3	21	56	13356	AE3J	30	5	2	20	37	8080*
VA3EEB	32	15	20	20	67	13200	NT4TS	29	6	0	18	35	7380
VE5DLM	75	4	121	12	200	12864	NQ2W	26	7	30	16	63	7360*
K1SD	38	8	25	21	71	12390	N2JNZ	25	5	55	15	85	6900
AB2TC	39	11	10	19	60	11970	YO4ATW	38	6	69	10	113	6380*
N7ZUF	42	8	18	19	68	11704	N7RCS	18	2	31	11	51	3102
VE4DRK	49	8	11	17	68	11424	K3HX	11	4	19	11	34	2508
DD2CW	56	5	55	14	116	10780*	JH1GNU	18	1	23	7	42	1722*
N4REF	36	7	0	21	43	10500	EA7AAW/QRP	14	3	20	7	37	1680*
KF7IWA	53	2	30	16	85	10080	JH7UJU	12	3	15	8	30	1680
VA7GRR	43	5	22	17	70	9758	VE6SKY	10	1	3	10	14	1260*
NS6V/6	33	8	10	17	51	8670	CT2JBG	8	2	5	7	15	910*
W4SVO	58	4	59	11	121	8558	KB3UCW	6	3	1	7	10	854
SP1RKT	31	10	11	16	52	8512*	VA3YT	11	1	14	5	26	790
VE6MO	41	8	3	14	52	8064	RW9JD	10	1	9	5	20	690*
VA7AQD	38	5	12	15	55	7560	SP4LVK	10	1	8	4	19	544*
VE3RGC	41	6	0	14	47	7420	KF0GX	10	1	3	4	14	504
NY4S	28	7	16	16	51	7232	HA0GK	8	0	6	5	14	460*
W7CH	26	7	11	17	44	7174	UA6AK	7	0	41	3	48	456*
OH6ECM	37	7	30	12	74	6840*	KE5SNJ	5	2	1	4	8	368*
K5HM	27	7	0	16	34	6560	HI3EPR	6	1	2	4	9	336*
DG1EA	35	3	29	14	67	6552	4X1RF	3	0	36	3	39	306*
VE5WD	33	5	4	14	42	6132	EU3NA	6	0	16	3	22	276*
KF5KHS	30	7	8	13	45	5928	AA4SD	5	0	8	4	13	264
KI4VCT	17	8	0	17	25	5610	4O4SM	2	0	43	2	45	212*
VE2DRO	16	8	3	17	27	5542	F5UKL	3	0	15	3	18	180*
EA2DT	26	5	19	12	50	4776	VE3FUJ	3	0	14	3	17	174
VE6ABO	28	6	10	11	44	4620	YO4AAC	4	0	17	2	21	148
VE6FT	23	6	22	11	51	4334	SP6BXM	2	0	12	2	14	88
K9JIG	18	7	2	13	27	4212	DJ3GE	3	0	3	2	6	72*
AE7DW	27	3	10	12	40	4200	HA5BA	2	0	5	2	7	60
AC0DH	20	5	3	13	28	3978	SQ9ORQ	3	0	3	1	6	36
PY5PDC	13	7	16	13	36	3926*	4K9W	0	0	11	1	11	22*
VE2POU	32	3	5	10	40	3900							
VA3LUK	23	3	11	11	37	3432							

## SINGLE OPERATOR SINGLE BAND

Call	CDN	RAC	DX	MLT	QSO	Score	Bd	Pwr	OH2LNH	10	0	123	4	133	1384*	20	LP
VE3MGY	77	6	299	17	382	25296*	160	LP	PY1SX	13	4	0	6	17	1260*	20	HP
N6RO	51	4	66	13	121	9386*	160	HP	OK1AOU	16	0	38	5	54	1180	20	LP
VE3MM	37	2	70	6	109	3300	160	LP	CT2KFA	16	1	8	6	25	1176*	20	LP
W7WR	17	1	23	5	41	1180*	160	HP	YR5T	10	0	64	5	74	1140*	20	HP
KE2VB	12	2	27	4	41	856	160	HP	SP3AZO	13	1	6	7	20	1134*	20	LP
VE7ABR	118	5	61	9	184	12618*	80	HP	DM2RN	8	2	50	5	60	1100	20	LP
WA4JQS	80	7	27	9	114	8946*	80	LP	RA1QD	15	0	48	4	63	984*	20	HP
VE5GC	37	6	43	12	86	6912*	80	LP	VE3QEE	7	4	3	6	14	936	20	HP*
K9GS	36	3	61	10	100	5420*	80	HP	RM3Q	10	0	58	4	68	864	20	HP
VE3NZ	50	2	116	7	168	5404*	80	HP	OH2KI	12	1	30	4	43	800	20	HP
WF7T	25	3	26	13	54	4706	80	LP	N9WL	12	0	0	6	12	720*	20	LP
DK0PO	20	1	62	9	83	3096*	80	HP	UE10SK	9	1	65	3	75	720	20	HP
VE9HX	14	4	3	7	21	1582*	80	HP*	PD5T	9	2	14	4	25	632*	20	LP
LY5O	18	1	30	6	49	1560*	80	HP	JG2REJ	10	1	3	5	14	630	20	HP
SP5GH	18	2	5	6	25	1380*	80	HP	JK1LUY	13	1	0	4	14	600	20	HP
VE2NMB	14	1	15	7	30	1330*	80	LP	SA6P	10	0	0	6	10	600*	20	HP
DL5ALW	10	2	4	4	16	592	80	LP	SV9COL	9	1	20	4	30	600*	20	LP
VE2PIJ	10	1	0	3	11	360	80	LP	ER3DX	13	0	0	4	13	520*	20	LP
UZOU	8	0	6	3	14	276*	80	HP	OH2BN	11	1	0	4	12	520	20	HP
DJ4MM	5	1	0	3	6	210	80	HP*	K3JHT	5	3	8	4	16	504	20	LP
ES4MM	3	0	3	3	6	108*	80	LP	IQ2CU	7	0	43	3	50	468*	20	LP
DF8UO	3	0	6	2	9	84	80	LP	EA3GBA	10	0	20	3	30	420*	20	LP
PS7DX	2	0	6	1	8	32*	80	HP*	CF7HZ	8	1	9	3	18	354	20	HP
VE3DZ	163	16	434	19	613	53542*	40	HP	Y08AXP	5	1	0	5	6	350	20	HP
VE3IAE	123	14	177	20	314	37280	40	LP	UA4FDL	4	0	36	3	40	336	20	LP
VE3XN	113	13	233	19	359	35264	40	HP	UA8WAA	7	1	7	3	15	312	20	HP
W8IQ	86	12	107	18	205	23652*	40	LP	UA4LU	8	1	0	3	9	300	20	HP
VE1SKY	113	7	131	15	251	22980*	40	LP	RU4SO	5	1	9	3	15	264	20	LP
N4MM	32	5	0	12	37	5242*	40	HP	VE3RYA	3	1	0	4	4	200	20	LP
F5NBX	24	2	78	11	104	4796*	40	HP	S52WW	5	0	6	3	11	186*	20	HP
K4VWW	42	1	30	8	73	4000	40	LP	PD3TRU	4	0	7	3	11	162	20	LP
VO1TA	22	4	45	9	71	3510*	40	LP	OH6TN	4	0	0	4	4	160	20	HP
YU1SV	17	1	124	6	142	2628*	40	LP	YO8BFC	4	0	0	4	4	160	20	HP
UA3MIF	17	3	42	6	62	1884*	40	LP	UA0WVW	0	0	76	1	76	152*	20	HP*
IC8FBU	17	1	27	6	45	1464*	40	LP	JA2GHP	5	0	1	2	6	104	20	LP
CT1ANO	13	2	35	6	50	1440*	40	LP	IK2IKW	3	0	7	2	10	88	20	LP
DH8WE	18	2	10	5	30	1200*	40	LP	DK8HE	2	1	0	2	3	80	20	LP
EA8CN	13	1	14	6	28	1068*	40	LP	SQ2PHG	1	0	13	2	14	72	20	LP
ROQA	9	1	43	5	53	980*	40	HP*	EW6GF	0	0	30	1	30	60*	20	LP
JR3AAZ	12	1	18	5	31	880*	40	LP	VK4TT	1	0	15	1	16	40*	20	LP
UT3EK	7	0	72	4	79	856*	40	LP	RV9YK	0	0	17	1	17	34	20	LP
YO2NAA	8	2	28	4	38	704*	40	HP*	KC2LST	0	1	0	1	1	20	20	HP
E73ECJ	9	0	11	5	20	560*	40	LP	RA9YUI	0	0	7	1	7	14	20	LP
E7RS	9	0	11	5	20	560*	40	LP	RW0SP	0	0	7	1	7	14	20	LP
VE3EIB	4	1	8	3	13	228	40	LP	JR0BUL	1	0	0	1	1	10	20	LP
N8DKA	3	1	0	4	4	200	40	HP*	KB3YSM	1	0	0	1	1	10	20	LP
RA6EE	5	0	7	3	12	192	40	HP	PA9HR	1	0	0	1	1	10	20	LP
RZ3Z	5	0	7	2	12	128	40	LP	RA4DB	0	0	5	1	5	10	20	LP
KD0CVO	2	1	0	3	3	120*	40	HP	RU9YF	0	0	3	1	3	6	20	HP*
JL1QDO	4	0	2	2	6	88	40	LP	LU7DUE	0	0	2	1	2	4*	20	LP
UR5FCM	2	0	12	2	14	88	40	LP	VE7NZ	70	10	238	16	318	22016*	15	LP
DL1MHJ	3	0	6	2	9	84	40	LP	DK3KD	43	6	80	15	129	10650*	15	LP
R3LC	3	0	8	1	11	46	40	LP	W7WW	57	4	62	12	123	9288*	15	HP
RU4LM	3	0	8	1	11	46	40	LP	VE3VHH	44	6	71	10	121	7020*	15	LP
JM1LFA	2	0	2	1	4	24	40	LP	CM2XN	14	2	12	7	28	1428*	15	LP
YO4RHK	1	0	5	1	6	20	40	LP	EA8DA	12	2	25	5	39	1050*	15	LP
IW2DJN	0	0	1	1	1	2	40	LP	YO5OHO	10	1	22	5	33	820*	15	LP
VE3KZ	254	15	796	22	1065	97504**	20	HP	MM0AMW	10	0	18	6	28	816*	15	HP
VE9AA	194	13	682	21	889	74844*	20	HP	VA3JWR	9	2	3	4	14	544	15	LP
K3TW	170	12	213	20	395	47320*	20	HP	F6GPT	11	0	11	4	22	528*	15	HP
VA6RQ	227	11	183	13	421	37128*	20	HP*	DJ6TK	5	1	18	3	24	318	15	LP
DJ8OG	111	12	167	19	290	31996*	20	HP	K2JF	6	1	1	3	8	246*	15	HP*
VA7JW	164	11	270	13	445	31200*	20	LP	VE6FUF	6	0	22	2	28	208*	15	HP
VA7AM	104	7	119	12	230	17016	20	LP	K8GT	2	1	1	3	4	126*	15	LP
VA3ATW	80	11	89	13	180	15574	20	HP*	JR2TRC	1	2	1	2	4	104*	15	LP
CO6LC	94	8	115	11	217	14630*	20	LP	VK6MAB	0	2	0	2	2	80*	15	LP
S57DX	44	5	161	15	210	12930*	20	HP	OH4EBD	2	0	1	2	3	44*	15	LP
VE4XM	75	5	65	11	145	10780*	20	LP	J11AQY	1	1	0	1	2	30	15	LP
VE2WU	42	0	460	7	502	9380*	20	HP	JD1BIA	0	1	1	1	2	22*	15	HP*
YT6M	31	5	100	13	136	7930*	20	LP	PY1NYJ	0	1	0	1	1	20*	15	LP
JA2XYO	38	7	32	12	77	7008*	20	HP	YO2CJX	2	0	0	1	2	20	15	LP
WB2DVE	27	9	17	11	53	5324*	20	LP	JE1GZB	1	0	0	1	1	10	15	LP
WB3CII	27	8	9	10	44	4480*	20	LP	G4NXG/M	10	2	0	7	12	980*	10	LP
VA3GUY	23	4	110	8	137	4240	20	LP	VA2BS	9	2	10	4	21	600*	10	LP
N2SQW	18	3	16	11	37	2992	20	HP	W3TLN	5	2	2	2	9	188*	10	LP
F4ASQ	25	2	18	9	45	2934*	20	HP	JA7OWD	2	0	5	1	7	30*	10	HP
YT2ISM	16	0	102	7	118	2548	20	HP	OK2ABU	0	0	1	1	1	2*	10	HP
VE3VHB	17	5	2	9	24	2466	20	LP	VE7JRX	1	0	0	1	1	10*	6	LP
OK1AXB	18	3	20	7	41	1960*	20	LP	<b>Checklogs:</b> VA2BS, VE5CQ, SP9IHP								
OH3EX	22	1	0	7	23	1680*	20	HP	HP* – Assumed high power								
DL5KUR	16	1	39	6	56	1548	20	LP	Call* – Assumed high power								
LZ2PT	15	1	67	5	83	1520*	20	HP	Score* – Certificate winner								
2E0ZSE	14	0	46	6	60	1392*	20	LP	Score** – Category/Plaque winner								





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### There are many

communications modes available to new Amateurs that will keep you busy for years. Everything from CW and AM, to Single Sideband (SSB), FM and now digital are available for you to play with. As technology advances along so does Amateur Radio equipment and the opportunities this brings about.

Digital radio is a new aspect of our hobby that we can experiment and improve upon. As with commercial, public service, and government communications, Amateur Radio digital voice signals provide improvements over analogue voice signals such as a much further transmission range, the ability to carry various data, unit id, information and text messaging, along with the voice signal, reduced bandwidth and background noise.

But just as with the other digital radio systems, universal standards in Amateur digital radio communications have not really come into fruition. Although a specific digital system (such as APCO25, EDACS, iDEN, OpenSky, TETRA or Tetrapol) is standard across a commercial or other user's platform, there are many types of digital systems that can be implemented, and none of them are compatible with any of the others.

# FRESH ON THE AIR

## — ADVENTURES FOR THE NEW AND BEGINNING HAM

### Is Amateur Radio Ready for Digital? (And is Digital Ready for New Hams?)

Many users of digital radio equipment spend countless hours researching and testing the various protocols before deciding on one that would suit their radio communications needs.

For Amateur Radio, the same dilemma faces hams: which digital system should I use? And we're not talking packet or HF digital here. We are talking VHF/UHF digital voice radio communications. There are currently two types of digital Amateur modes: DSTAR and C4FM.

DSTAR is the digital mode available exclusively on ICOM digital radios. It has been around for a while and is used by many hams across North America. You will find several DSTAR repeaters in Canada in major urban centres, and some of these are dedicated to exclusive digital ARES or emergency operations. C4FM is the digital mode used by Yaesu digital radios. Yaesu's entry into the digital Amateur field now throws a little monkey wrench into the whole thing.

Why? Well here's the perfect example. The incompatibility of various digital modes among manufacturers and the various digital modes used by Canadian business and industry, public service and government communications has presented difficulties in non-interoperability between services, agencies and users, especially in emergency and Search and Rescue operations. This inability for multiple agencies to communicate with each other is what prompted the Canadian Government to implement a national search and rescue analogue VHF frequency.

Almost all users of radio communications equipment in Canada have access to – or can easily get access to – analogue VHF two-way radios. The national Search and Rescue frequency of 149.080 MHz – donated for use by Industry Canada, which still uses the frequency for their own communications needs – is available for all users (even Amateurs) on a licensed basis who need to provide Search and Rescue communications. This national frequency bypasses the lack of interoperability of all users regardless of what analogue or digital radio system they are using (including trunking).

So a lack of a single digital standard in Amateur Radio means that only digital radios from the same manufacturer with the same digital mode can talk to each other. So you can't communicate digitally from an ICOM digital rig to a Yaesu digital rig. Both radios – and all current digital Amateur rigs have the capability to switch over – would have to use analogue to talk to each other. So if you have an ICOM digital radio and your friend has a Yaesu digital radio, you would have to switch over to analogue mode.

It seems somewhat pointless to use digital radios for this type of QSO, right? And this lack of a standard is going to do one of three things to Amateur digital voice communications: force a single standard for all manufacturers from a current digital mode through consumer demand (think Beta/VHS); cause digital Amateur Radio to fizzle out (think AM Stereo and Quadraphonic); or keep the status quo and continue the inability for intercommunications between manufacturers (which is currently what is happening).

For the new Amateur Radio operator, getting a digital radio (and they can be costly) may not be that good of an idea at the present time. Amateur VHF/UHF digital voice communications may be more for experimenting than for effective everyday communications right now. If you do have access to a digital repeater or regularly communicate with local hams who have digital radios, then you could possibly venture into this part of our hobby. But if you are just getting your feet wet, stay with good old traditional analogue rigs for now. Let the digital market expand and progress to see what will happen in the near future.

If digital voice communications is something that intrigues you, do your research and check out <http://www.dstarinfo.com>, <http://www.yaesu.com> and <http://www.icomamerica.com/en/amateur>. Get all the information you can and make a very informed decision before you venture into digital communications. Amateur Radio digital voice communications is a new mode that has a lot of potential to transform our hobby into a new age of radio communications. But without some type of universal digital standard among Amateur Radio manufacturers, new Amateurs may find themselves avoiding digital communications altogether. And that would be such a shame.

**Transmission Tidbit:** Observational Trivia – Next time you go to a Hamfest, look around at the attendees. Do they not look like little children mesmerized by all the toys? Eyes as big as saucers, wallets full of cash. All to find that bargain they are looking for. Problem is, we buy way too much more than just the bargain. Impulsive Ham Buying. IHB. No treatment for this yet. AND WE DON'T WANT ONE!

I would love to hear from our new female and very young Amateurs on your first impressions of the hobby, both positive and negative. Write me via the magazine; email me at [phillipjboucher@gmail.com](mailto:phillipjboucher@gmail.com), or via my website at <http://www.phillipjboucher.com>. New E-book to be available sometime in 2013, "The Complete Guide to Yaesu's VX-6R".



# PUBLIC SERVICE / ARES

The southern Alberta flooding is considered to be one of the largest natural disasters in Canadian history. There certainly was no time for advanced training for this event as floodwaters reached unimaginable heights within minutes. All of the ARES members – and nine members in Alberta – deserve a “pat on the back” for coming through in spades during this time of providing essential communications at a moment’s notice.

The Loyalist City ARC has always provided an amazing group of volunteers to make life easier for organizers for events such as the “Marathon By The Sea”. Keeping track of 1,200 runners, in a three-part marathon, is no easy task without having skilled communicators on hand.

The Niagara Peninsula ARC met the challenge in helping the friends of Laura Secord celebrate the bicentennial of her journey. What an interesting way to bring attention to Amateur Radio to the politicians involved in this exciting 32-kilometre walk commemorating this event in our history. Kudos goes out to the organizers of this communications event. I have said it before, but it is always worth repeating, these types of public service events help to hone our communication skills.

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Curtis Bidulock, VE6AEW, when we had to adapt to a new approach we had the resource guide to assist us. This was important for the Provincial communications and planning to bring on other communities such as Medicine Hat.

We worked multiple frequencies to segregate traffic. We kept a Provincial frequency open to traffic only needed between municipalities. The locally affected areas ran their own nets with coordination to neighbouring zones/nets. If I needed to request extra help in High River, I switched my VFO to the Calgary frequency and made a call. Amateur Radio was the only mode of communications I had to rely upon in High River for the first 36 hours, and it was important we communicate between affected zones.

That brings me to my next point, when the going gets tough everyone cooperated. There was no ego or pride from one group towards another. Egos were checked at the door and club politics were forgotten.

We kept tabs on our team. Health and Welfare checks were performed regularly, some would refer to this as a Roll Call. This ensured we knew who we had deployed where and that they were still active (or awake on the overnight shifts) and well.

I deployed two operators to critical locations such as the Hospitals, regional Emergency Operations Centres (EOC), etc. This ensured that there was always 100% coverage at all times and allowed the operators in those positions to be able to take breaks away from the stressful environment they were in. In cases where we had less experienced EmComm operators, we paired them with more

## HOW FIELD DAY BECAME A REALITY: THE STORY OF HOW WE HELPED SOUTHERN ALBERTA

Vince d'Eon, VE6LK  
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Okotoks, Alberta

As you read in the September-October 2013 issue of TCA, we had our hands full assisting the Town of High River, Alberta from June 20-22 along with several other flood-affected communities in Southern Alberta.

The Alberta Provincial ARES leadership team were in Calgary on July 27 for a debrief meeting on the incident and to develop ideas for our next callout. You can read a bit about that meeting at <https://www.rac.ca/en/news/bulletins/2013/28-0/>. What follows is output from that meeting including a combination of things we did well, things requiring improvement, and the technologies we used to facilitate communications under extreme circumstances. While I hope you found the last article interesting, I trust you will find this article helpful for your teams when you get the call to help.

### THINGS WE DID WELL

*It is said that Luck is what happens when Preparation meets Opportunity. In that case we were very lucky as we had a wide variety of knowledge and preparation among the members of the team. Here is a list of what we did well that made our job easier.*

We all stayed flexible. The teachings of ICS style management is that the radio communications function resides within the Logistics function. The reality is that the EmComm operator more often than not interacts directly with the Incident Commander and needs to be highly flexible and adaptable to whatever the

rapidly changing requirements are that moment. For example, one moment I was passing traffic and the next I was helping the Town of High River assess a donation of 100 VHF handheld radios and repeater for the Town's use.

We leveraged known networks. As our span of communications was most of the Province, we used the Southern Alberta Repeater Association (SARA) as our main Provincial backbone ([www.saralink.ca](http://www.saralink.ca)). The Net Control position was located in Red Deer, halfway between Edmonton and Calgary, and the lead in that position had solid knowledge on how to operate and configure the network for optimal use.

We had backup. We set up HF nets on both 40 and 80m in the event that the SARA network failed, and this allowed us to have operators that were geographically away from the affected areas thus not hampered by power or Internet failures.

This brings me to another point – plan on the failure of your conventional networks, i.e., Internet and Telephone and know your pre-tested backup plans. In times like we experienced, the dominant cellular and landline provider's network collapsed, and in neighbouring towns cellular was so overloaded that even SMS would not get through. When all else fails, RF gets through was never more true than during this event.

We had documented resources. Thanks to a solid ARES resource manual compiled by



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experienced EmComm operators to provide training and increase the experience base among team members. There is always an opportunity to grow a team member's skill!

I divided the net control and staffing logistical functions away from the High River EOC. In any other callout I've done the EOC handles all traffic and scheduling of resources for shift coverage. For this event I split it away so that I could focus on the sheer amount of information we needed to handle. Our net control for the High River area was located some 25 kilometres away on a stable power grid and with line of sight propagation to my location at the EOC; we could have worked simplex if repeaters failed. I will follow this approach again.

Lastly, we followed a consistent use of tactical call signs that made sense to all operators on the Provincial net. This reduced confusion over which EOC we were speaking about (there were four on the air on various frequencies) and ensured traffic was passed efficiently and error-free.

### THINGS THAT WE NEED TO MAKE IT EASIER NEXT TIME

*One thing that most people will agree upon is that our disasters are getting worse and more frequent. With that in mind we know we will be called upon again, and we will be better ready to go thanks to these planned improvements.*

One challenge that we have in the Province today is that the SARA backbone does not have connections to all of the areas that we supported. One idea we are looking into is a portable, frequency-agile linkable repeater; one that can be rapidly deployed and that is pre-programmed with the standard repeater matrix plus the allocated Provincial response frequencies.

While HF Nets were a good backup to the VHF/UHF systems, the current frequencies in the ARES list are not suitable for local communications in Canada as they often lie in the phone portion of the US Band Plan. While this approach has merit when communications are necessary to the USA, it is a problem especially since Field Day was in full swing during our callout. The recommendation is to consider more or different ARES HF frequencies, a matter for RAC Field Services.

At the EOC level, we learned that a whiteboard is an essential resource to track things, as are the availability of markers and an eraser. Suffice it to say that markers and an eraser are going in my Go-Kit. Oh, as well as a clock that shows local 24-hour time – even though the EOC had one, it was helpful to know what time

## LOYALIST CITY ARC PROVIDES COMMUNICATIONS SUPPORT FOR MARATHON BY THE SEA



Marathon By The Sea volunteers (from left): Art, VE9ARB; Daniel, VE9QC; Linda, VE9GLF; Elaine, VE9ERL; Stephen, VE9SY; Cindy, VE9CDL; Larry, VE9LRL; Steve, VE9XMQ; Sylvia, VE9SLF; Len, VE9MY. Missing from the photo: Rick, VE9RS; Doug, VE9DSO; and Mark, VE9MWA.

The 19th annual Marathon By The Sea event attracted 1200 runners to this year's event which took place on August 11 at Saint John, New Brunswick. Loyalist City Amateur Radio Club (LCARC) again provided much needed communications and support for the Marathon. The Marathon consists of three parts; a Five Miler, Half-Marathon and Full (40K) Marathon.

This year's event was another big success with many volunteers including 13 Amateurs from the club who provided communications support. Some years back the organizers rented commercial VHF radios for the event but found there were many "dead spots" in the coverage, especially in the 40K portion. LCARC was asked to assist and for the last six years have provided support for the Marathon. The club has expanded from just 2m voice communications through the club's repeater VE9SJN, to now include APRS coverage on the lead and tail end runners in the three stages. These stages run concurrently, so six vehicles are required with APRS equipment.

Marathon organizers have been really impressed with being able to easily determine where the lead and tail-end runners are at all times. In addition to having lead and tail-end vehicles, we also provided an Amateur with 2m VHF in each of the three Race Marshall vehicle's and also in the all important "water-wagon".

The building at the start-finish area (Lily Lake Pavilion) was set-up with 2m VHF and APRS equipment to act as control and also with a projector and screen, provided location information on the lead and tail-end runners. Many family and friends of the runners, as well as visitors to the pavilion, came by to view the Amateur Radio setup and club history which was on display as well as information on Amateur Radio in general.

Several club members had their own VHF radio's with built-in APRS while LCARC has four APRS stations each consisting of a Yaesu FT-1900 VHF radio with 5/8 wavelength mag-mount antenna and Tiny Tracker 4. ARS was iGated to the Pavilion for display.

Assisting with this years marathon were: VE9ARB, VE9RS, VE9XMQ, VE9SLF, VE9SY, VE9CDL, VE9LRL, VE9ERL, VE9QC, VE9DSO, VE9MWA, VE9GLF and VE9MY.

A big thank you to all those who assisted.

– submitted by Len Morgan, VE9MY

it was for logging information at the Radio Desk without trying to look halfway across the EOC at a clock. A smartphone doesn't cut it for this duty as you are likely using it for more than one purpose anyway.

One item (of many) we are looking into is dedicated equipment at our EOC in High River. As the military would say "two is one, one is none" when referring to redundant and critical systems. It will be essential that these radios are multiband, the same model as each other, and come equipped not only with headphones but also an external speaker on an A/B style switch as well as a dedicated power supply per radio. The A/B switch makes it quick and easy to go between headphones

and external speaker. For us sharing a room with others, keeping noise down was a priority and headphones were needed, but still there were times when a few of us had to listen in concurrently.

We learned that in a very busy EOC the Radio Operators are so inundated with requests in the first 24 hours from the served agency that recollection of events can suffer. For example, was I just asked to provide one or two operators to the evacuation centre an hour ago? It could prove helpful to have our own team's scribe to capture events on paper when they are happening, and this also assists to making After Action Report writing much easier.

## TECHNOLOGIES USED

*We used a variety of technologies to support the affected areas.*

**Telephone:** while one of the landline and cellular provider's service was offline, the other provider's was up and operating in High River. However the same couldn't be said for other areas. Our learning from this is that it's helpful to not only know what deployed resources' cellphone numbers are but also what network they are on.

**HF, VHF and UHF:** we used them all. The SARA network is VHF with RF point to point links as well as Internet. The entry points to the network are RF and Internet. In the event that this network should have failed, we would have used our 40m and 80m phone operators already in place. We utilized the parts of the Amateur Radio spectrum that best suited our needs for each part of the territory we were working in.

Analogue and Digital modes were used. HF used SSB, VHF and UHF used both FM and D-STAR via the XRF021B reflector in Toronto. Thanks to the FREE STAR reflector owner that dedicated a module for our use. Medicine Hat EOC connected in via a computer equipped with a dongle at one point.

In the High River area, we were heavily reliant upon the fully-linked 2m network provided by the Foothills Amateur Radio Society (<http://www.fars.ca>) for our coverage. Our active area for the callout was about 1,200 km<sup>2</sup> of mostly flat terrain. We used 2m for simplex in-town and 70cm for EOC area coverage as we were all runners as well as operators.

## LOOKING FORWARD

The Alberta ARES team wanted to share this with you so that our best practices can be adopted and adapted to your needs and circumstances. And, we'd like to hear from you about your team's best practices. Please send an email to the author ([ve6lk@rac.ca](mailto:ve6lk@rac.ca)) with your team's comments.



[http://www.cafepress.ca/rac\\_radio](http://www.cafepress.ca/rac_radio)

## XL3S: BICENTENNIAL OF LAURA SECORD'S JOURNEY

*Dave Digweed, VE3FOI  
Coordinator XL3S, NPARC*

This year, the Niagara Peninsula ARC honoured Laura Secord's arduous trek through the fields and woods of the Niagara Peninsula to warn First Nation warriors and British Lieutenant FitzGibbon of an attack by the American forces.

On June 22, 1813 Laura started her journey. On June 22, 2013 over 1,000 hikers recreated her journey of 32 kilometres which included many VIPs such as Laureen Harper, the Prime Minister's wife, along with other MPs, MPPs local Mayors and just ordinary folk.

Special Event Station XL3S was set up "on the trail" at the Niagara College, Niagara on the Lake Campus.

Many of the hikers received cool water handed out by NPARC members. Contacts were made on the ONTARS net to Ingersol, which is named after James Ingersol, Laura's father. New Amateur Lindsay, VE3XKY, made contact with Minnie, VE3DBQ, in Ingersol for a YL to YL contact.

During the month of operation (June 15 to July 15, 1700 contacts were made on 75, 40, 20, 17, 10, 6, 2 metres, CW, SSB and PSK31.

The operation was excellent due to all the assistance I received from: Ed, VE3ITH, Tony, VE3XNT, Denis, VA3ONO, John, VA3BOZ, Geddie, VE3CJX, Rick, VE3ROC, Ian, VE3ERL, Kevin, VE3KGS, Roy, VA3NP, Wasi, VA3NAZ, David, VE3DYD, Lindsay, VE3XKY, Paul, VA3PCK, Bob, VE3HNN, Basil, VA3MZB, Richard, VE3MFN, Rick, VA3WU, Dennia, VE3XC and John, VE3JWH.

The cooperation of the Friends of Laura Secord was excellent and they enjoyed talking on Amateur Radio and spreading the news about Laura.

A special QSL card – again printed on a historic printing press by John, VE3JWH – will be available for all contacts. Direct replies will use the special Canada Post Laura Secord stamp.

The most important factor in this is also the 200 years of Peace and Friendship with the United States and to celebrate with a special event operation via Amateur Radio.

Top photo: "On the Air" with Friends of Laura Secord, Caroline McCormick, Bryant Prosser and Geddie, VE3CJX. The operator is Dave, VE3FOI.

Middle photo: Jim Diodati (Mayor of Niagara Falls) and wife Yvonne operate on 20 metres with Ed, VE3ITH and Paul, VA3PCK.

Bottom photo: Laureen Harper and friends walk by the XL3S Special Events Station.





# RAC CANADA WINTER CONTEST 2013 / CONCOURS D'HIVER DU CANADA RAC 2013

In December each year, Radio Amateurs of Canada (RAC) sponsors the Canada Winter Contest. Amateurs all over the world are invited to participate.

**Contest Period: 0000 UTC to 2359 UTC December 28, 2013.**

Next year the contest will be held on December 27, 2014.

**Bands and Modes:** 160, 80, 40, 20, 15, 10, 6 and 2 metres, CW and phone (SSB, FM, AM, etc.)

**Suggested frequencies:** CW – 25 kHz up from the band edge and for SSB – 1850, 3775, 7075, 7225, 14175, 21250, 28500 kHz. Check for CW activity on the half-hour.

**Exchange:** Stations in Canada send RS(T) and province or territory. VEØs and stations outside Canada send RS(T) and a serial number.

**QSOs:** Contacts with stations in Canada or VEØs are worth 10 points. Contacts with stations outside Canada are worth 2 points. Contacts with RAC official stations are worth 20 points. RAC official stations are: VA2RAC, VA3RAC, VE1RAC, VE4RAC, VE5RAC, VE6RAC, VE7RAC, VE8RAC, VE9RAC, VO1RAC, VO2RAC, VY0RAC, VY1RAC and VY2RAC. You may work any station once on each of the two modes, on each of the eight contest bands.

It is **prohibited** to make CW contacts in the conventional phone sub-bands and phone contacts in the conventional CW sub-bands. Contacts or soliciting QSOs through a repeater during the contest period is not allowed.

**Multipliers:** Thirteen in total, Canada's 10 provinces and three territories. Each multiplier may be counted once on each mode on each of the eight contest bands. The multipliers, with their postal abbreviations and prefixes are: Nova Scotia [NS] (VE1, VA1, CY9, CYØ); Quebec [QC] (VE2, VA2); Ontario [ON] (VE3, VA3); Manitoba [MB] (VE4, VA4); Saskatchewan [SK] (VE5, VA5); Alberta [AB] (VE6, VA6); British Columbia [BC] (VE7, VA7); Northwest Territories [NT] (VE8); New Brunswick [NB] (VE9); Newfoundland and Labrador [NL] (VO1, VO2); Nunavut [NU] (VYØ); Yukon [YT] (VY1); and Prince Edward Island [PE] (VY2). Certain special Canadian prefixes in use at the time of the contest may also apply; however there may be no more than 13 multipliers on each band/mode. Please use the multiplier abbreviations, in square brackets, noted above.

**Final Score:** The total QSO from all bands multiplied by the total number of multipliers from all bands.

**Categories:** The following 9 categories are eligible for plaque's or certificates as detailed in the Awards section of the rules.

- Single Operator All Bands High Power (>100 Watts) – **Radioworld**
- Single Operator All Bands Low Power (max. 100 Watts output) – **Contest Club Ontario**
- Single Operator QRP (max. 5 Watt output) All Bands & Single Band \*\* – **QRP Canada**
- Single Operator All Bands CW only, any authorized power – **Maritime Contest Club**
- Single Operator All Bands PH only, any authorized power – **Saskatchewan Contest Club**
- Single Operator Single Band, any authorized power \*\*\* – **Elkel Products**
- Multi-Operator Single Transmitter High Power (>100 Watts) \* – **Alfa Radio**
- Multi-Operator Single Transmitter Low Power (max. 100 Watts output) \* – **Tony Allsop VE3FTA Memorial by the Mississauga ARC**
- Multi-Operator Multi-Transmitter, any authorized power – **Radioworld**

For the Canada Winter Contest a special trophy is awarded for the highest Single Operator (no power classification) Foreign Entrant – **Russ Coleston VK4XA Memorial by Alan Goodacre, VE3HX.**

Special thanks to our sponsors for their support of the RAC contests.

En décembre de chaque année, Radio Amateurs du Canada parraine le concours d'hiver du Canada. Les amateurs du monde entier sont invités à y participer.

**Durée du concours: 0000 UTC à 2359 UTC le 28 décembre 2013.**

L'année prochaine, le concours aura lieu le 27 décembre 2014.

**Bandes et modes d'émission:** 160, 80, 40, 20, 15, 10, 6 et 2 mètres, en CW et/ou en phonie (BLU, FM, AM, etc.).

**Fréquences suggérées:** CW – 25 kHz au dessus de la limite inférieure de la bande. BLU – 1850, 3775, 7075, 7225, 14175, 21250 et 28500 kHz. Vérifiez aux demi-heures pour l'activité en CW.

**Échange:** Les stations au Canada envoient un rapport RS(T) ainsi que leur province ou territoire. Les stations VEØ et les stations à l'extérieur du Canada envoient un rapport RS(T) ainsi qu'un numéro séquentiel.

**Les QSO:** Les contacts avec des stations au Canada ou des stations VEØ valent 10 points. Les contacts avec des stations à l'extérieur du Canada valent 2 points. Les contacts avec des stations officielles de RAC valent 20 points. Les stations officielles de RAC sont: VA2RAC, VA3RAC, VE1RAC, VE4RAC, VE5RAC, VE6RAC, VE7RAC, VE8RAC, VE9RAC, VO1RAC, VO2RAC, VY0RAC, VY1RAC et VY2RAC. Vous pouvez contacter une station une fois dans chacun des modes, sur chacune des huit bandes du concours.

Il est défendu de faire des contacts en CW sur les parties des bandes normalement réservées à la phonie, et vice versa. Il est aussi défendu de faire ou de solliciter des contacts via un répéteur pendant le concours.

**Multiplicateurs:** Treize au total, les 10 provinces canadiennes et les 3 territoires. Chaque multiplicateur peut-être compté une fois pour chaque mode sur chacune des huit bandes du concours. Les multiplicateurs, avec leur abbréviation postale et leur(s) préfixe(s), sont: Nouvelle-Écosse [NS] (VE1, VA1, CY9, CYØ); Québec [QC] (VE2, VA2); Ontario [ON] (VE3, VA3); Manitoba [MB] (VE4, VA4); Saskatchewan [SK] (VE5, VA5); Alberta [AB] (VE6, VA6); Colombie-Britannique [BC] (VE7, VA7); Territoires du Nord-Ouest [NT] (VE8); Nouveau-Brunswick [NB] (VE9); Terre-Neuve et Labrador [NL] (VO1, VO2); Nunavut [NU] (VYØ); Yukon [YT] (VY1); Ile-du-Prince-Édouard [PE] (VY2). Certains préfixes canadiens spéciaux en usage pendant le concours peuvent aussi s'appliquer; cependant, il ne peut y avoir plus de 13 multiplicateurs pour chaque bande/mode. Veuillez s'il-vous-plaît utiliser l'abréviation du multiplicateur, entre crochets, telle que notée ci-haut.

**Pointage final:** Le total des des QSO obtenus sur toutes les bandes, multiplié par le nombre total de multiplicateurs obtenus sur toutes les bandes.

**Catégories:** Les neuf catégories suivantes sont éligibles pour des plaques ou des certificats, tel que détaillé dans la section Prix des règlements du concours.

- Opérateur unique, toutes bandes, haute puissance (>100 Watts) – **Radioworld**
- Opérateur unique, toutes bandes, basse puissance (max. 100 Watts à la sortie) – **Contest Club Ontario**
- Opérateur unique QRP (max. 5 Watts à la sortie), toutes bandes et bande unique \*\* – **QRP Canada**
- Opérateur unique, toutes bandes, CW seulement, toute puissance autorisée – **Maritime Contest Club**
- Opérateur unique, toutes bandes, phonie seulement, toute puissance autorisée – **Saskatchewan Contest Club**
- Opérateur unique, bande unique, toute puissance autorisée \*\*\* – **Elkel Produits**
- Opérateurs multiples, émetteur unique, haute puissance (>100 Watts) \* – **Alfa Radio**
- Opérateurs multiples, émetteur unique, basse puissance (max. 100 Watts à la sortie) – **Trophée mémorial Tony Allsop VE3FTA par le CRA Mississauga**
- Opérateurs multiples, émetteurs multiples, toute puissance autorisée – **Radioworld**

## Category notes:

1) The contents of a log that is submitted for a specific category must reflect that category. In the event of a conflict between the actual content of the log and the stated category in the Cabrillo header or contained in other elements of the entry material, the actual contents of the log will be used to determine the category of entry where possible. In the event this cannot be determined or in the event where a log does not identify the entry category, the entry will be classified into the Multi-Operator, Multi-Transmitter, any authorized power category.

Any entrant who wants to enter a specific category (i.e. Single band entry) but who also worked additional contacts outside that category **may** submit those additional contacts in a **separate** check log file. Do not include them in the main entered category log file.

2) Where the categories have a power class and the submitted log does not clearly identify the power class entered, then the log will be treated as if the highest power class for that category was entered.

3) Single operators who receive assistance from a DX spotting system, including Skimmer and similar technologies or any type of Packet Cluster network during the contest must classify themselves as Multi-ops.

4) \* In the Multi-Single category only one transmitter and one band are permitted during the same time period (defined as 10 minutes). Exception: One, and only one, other band may be used during any 10-minute period, if and only if the station worked is a new multiplier. In other words the Multi-Single Transmitter class allows a second station to "hunt" and work multipliers only on a single separate band during any 10-minute period.

5) Multi-Multi category stations may operate on several bands simultaneously.

6) \*\* Although there is only one QRP category, which qualifies for a plaque or certificate, it is intended that the published results would show All Bands or the Single Band of operation. To facilitate this break out of the listings, your entry should indicate the band(s) or mode(s) operated.

7) \*\*\* Although there is only one Single Operator Single Band category that qualifies for a certificate or award, it is intended that the published results would show High Power or Low Power. To facilitate this break out of the listings, your entry should indicate the power class you used.

8) Operators who have participated in any multi-operator category entries may not contact the station they have participated in if they were to operate as part of another entry in the same contest. In addition, guest operators at any station regardless of entry category may not claim contacts with the station host owner or host station mobile call for points or multipliers.

**Awards:** Plaques will be awarded to the top-scoring entrants in each category, as noted above in the category list. Special thanks to our sponsors for their ongoing support!

Certificates will be awarded to the top-scoring entrant in each category in each of:

- Canadian provinces or territories
- Continental US call districts, W0 through W9 as well as Alaska and Hawaii. US Commonwealths, Territories and Possessions such as Puerto Rico, US Virgin Islands, etc will be treated as equivalent to a DXCC country
- DXCC country, excluding Canada and the US.

To facilitate the proper allocation of certificates, all US stations should indicate their actual US call district based on their actual address, as provided in the Cabrillo header, if different than indicated by their call prefix. DX stations should indicate the actual country of operation if different than indicated by their call prefix by indicating the country as part of the portable call sign designator.

RAC stations will compete and be considered the same as any other entrant for eligibility to plaques and certificates.

**Results:** Will be published in The Canadian Amateur magazine by the Radio Amateurs of Canada. The results will also be published on the RAC website at <http://www.rac.ca> in the contest section.

Pour le concours d'hiver du Canada, un trophée spécial est décerné au participant étranger (opérateur unique, sans classe de puissance) ayant obtenu le plus haut score – **le trophée mémorial Russ Coleston VK4XA par Alan Goodacre, VE3HX.**

Nous tenons à remercier nos commanditaires pour leur appui aux concours de RAC.

## Notes sur les catégories:

1) Le contenu d'un journal de bord soumis dans une catégorie spécifique doit refléter cette catégorie. Dans le cas d'un conflit entre le contenu réel d'un journal de bord et la catégorie inscrite dans l'entête Cabrillo ou contenue dans d'autres éléments de la soumission, le contenu réel du journal sera utilisé pour déterminer la catégorie de l'inscription. Dans le cas où celle-ci ne peut être déterminée, ou si le journal de bord n'identifie pas la catégorie de l'inscription, celle-ci sera classée dans la catégorie opérateurs multiples, émetteurs multiples, toute puissance autorisée.

Tout participant désirant s'inscrire dans une catégorie spécifique (par exemple bande unique), mais ayant aussi établi des contacts additionnels hors de cette catégorie **peut** soumettre ces contacts additionnels dans un journal de bord **séparé**. Ne les incluez pas dans le journal de la catégorie principale dans laquelle vous participez.

2) Dans le cas où les catégories ont des classes de puissance et que le journal soumis ne l'identifie pas clairement, celui-ci sera traité comme si la classe de puissance la plus élevée pour cette catégorie a été inscrite.

3) Des opérateurs uniques qui reçoivent de l'aide d'un système de repérage DX, comme Skimmer et des technologies similaires, ou n'importe quel type de réseau « Packet Cluster » pendant la période du concours, devront s'inscrire dans la catégorie opérateurs multiples.

4) \* Dans la catégorie opérateurs multiples, émetteur unique, un seul émetteur et une seule bande sont permis durant la même période de temps (définie comme étant 10 minutes). Une exception est cependant tolérée: une seule autre bande peut-être utilisée pendant cette période de 10 minutes, seulement si la station contactée est un nouveau multiplicateur. En d'autres mots, la classe opérateurs multiples, émetteur unique permet à une seconde station de « chasser » et contacter des multiplicateurs sur une seule autre bande dans une période de 10 minutes.

5) Les stations participant dans la catégorie opérateurs multiples, émetteurs multiples peuvent opérer sur plusieurs bandes en même temps.

6) \*\* Même s'il n'y a qu'une seule catégorie QRP qui soit éligible pour une plaque ou un certificat, il est prévu que les résultats publiés afficheront soit toutes bandes, soit la bande unique d'opération. Afin de faciliter la publication des résultats, votre entrée devrait indiquer le (les) bande(s) ou mode(s) opérés.

7) \*\*\* Même s'il n'y a qu'une seule catégorie opérateur unique, bande unique, qui soit éligible pour une plaque ou un certificat, il est prévu que les résultats publiés afficheront soit haute puissance, soit basse puissance. Afin de faciliter la publication des résultats, votre entrée devrait indiquer la classe de puissance utilisée.

8) Des opérateurs ayant participé à quelconque entrée dans la catégorie opérateurs multiples ne peuvent pas contacter la station à laquelle ils ont participé s'ils devaient opérer en tant que membre d'une autre entrée lors du même concours. De plus, des opérateurs invités d'une station, peu importe la catégorie, ne peuvent pas revendiquer de contacts avec le propriétaire de la station hôte ou avec l'indicateur d'appel mobile de la station hôte pour des points ou des multiplicateurs.

**Prix:** Des plaques seront remises aux participants ayant obtenu le plus haut score dans chaque catégorie, telle que notée ci-haut dans la liste des catégories. Nous tenons à remercier nos commanditaires pour leur support continu! Des certificats seront remis aux participants ayant obtenu le plus haut score dans chaque catégorie se situant dans chacun(e) des:

- Provinces et territoires canadiens
- Districts d'appels des États-Unis continentaux, W0 à W9, et aussi pour l'Alaska et Hawaii. Les Commonwealths américains, territoires et possessions tels que Porto Rico, les îles Vierges américaines, etc, seront considérés comme étant équivalents à un pays DXCC; et
- Pays DXCC, excluant le Canada et les États-Unis.



**Entries:** All entries (electronic or paper logs) must be postmarked or electronically submitted by **January 31, 2014**. Electronic entries will be confirmed by return email. Send email entries to: [canadawinter@rac.ca](mailto:canadawinter@rac.ca)

Send paper entries to: Radio Amateurs of Canada  
720 Belfast Road, Suite 217  
Ottawa, Ontario, Canada K1G 0Z5

We will be publishing a list of logs received and the categories entered on the RAC website during and/or after the submission period after the cut off date to assist in correcting any entry categorizations.

Paper mail entries must contain a summary sheet showing score calculation, a dupe sheet listing calls worked on each mode on each band, a multiplier check sheet and log sheets. Log sheets must show time, band, mode, call of station worked, exchanges sent and received and claimed for each QSO. New multipliers must be clearly marked in the log.

**Contest entry forms are available on the RAC website at:**

<https://www.rac.ca/en/rac/programmes/contests>

Any entry with 100 or more contacts should be submitted in digital format. The preferred electronic format is the RAC Cabrillo format. The files must be submitted in plain ASCII/Text format.

While the contest committee prefers Cabrillo formatted submissions, we will continue to accept electronic logs from older versions of contest software, but your file must be in ASCII/Text format and have all the required information. Given there are several free programs that support the RAC contests and generate an acceptable Cabrillo entry, we encourage you to seek out one of these programs.

The RAC Cabrillo format is described and its detailed layout is shown on the RAC website at:

<http://www.rac.ca/en/rac/programmes/contests>

Electronic logs that do not have a complete Cabrillo header should provide a summary sheet with the same information as shown for the paper log entries. The standard summary sheet provided by the typical logging program is generally acceptable, but you should confirm that it contains the same information as shown for paper log entries.

A properly filled out Cabrillo header section will be a sufficient substitute for a summary sheet for logs submitted in that format. Please ensure that you review the header for accuracy and that it is completely filled out. Name your file with your Call Sign and the file extension .LOG (e.g., yourcall.LOG). If you email your log, please send the file(s) as **attachments**.

Do not paste the log file into the text of your message as there may be issues with the formatting making it difficult to properly extract the log. Large files may be zipped if necessary.

**If you need help with preparing or emailing your log, please contact Sam Ferris: [ve5sf@rac.ca](mailto:ve5sf@rac.ca)**

For the previous year's contest results, visit the RAC website (<http://www.rac.ca>) in the Contesting section.



[http://www.cafepress.ca/rac\\_radio](http://www.cafepress.ca/rac_radio)

Afin de faciliter l'attribution des certificats, toutes les stations américaines participantes devraient indiquer leur réel district d'appel américain basé sur leur adresse réelle, telle que fournie dans l'entête Cabrillo, s'il diffère de celui indiqué par le préfixe de leur indicatif. Les stations DX devraient indiquer leur réel pays d'opération s'il diffère de celui indiqué par le préfixe de leur indicatif.

Les stations officielles RAC compétitionneront et seront considérées comme étant pareilles à tout autre participant en ce qui concerne l'éligibilité aux plaques et certificats.

**Résultats:** Ils seront publiés dans la revue The Canadian Amateur, publiée par Radio Amateurs du Canada. Il seront aussi publiés sur le site web de RAC au <http://www.rac.ca> dans la section "concours".

**Soumission des inscriptions:** Toute inscription (électronique ou papier) doit porter un cachet de la poste, ou être soumise par courriel, pour le **31 janvier 2014**.

Les soumissions électroniques seront confirmées par courriel.

Envoyez vos inscriptions par courriel à :

[canadawinter@rac.ca](mailto:canadawinter@rac.ca)

Envoyez vos inscriptions papier à :

Radio Amateurs du Canada  
720 ch. Belfast, suite 217  
Ottawa, Ontario, Canada K1G 0Z5



Nous publierons une liste de journaux de bord reçus avec leur catégorie sur le site web de RAC pendant et/ou après la période de soumission et après la date limite afin d'aider à corriger toute erreur de catégorisation des inscriptions.

Les inscriptions papier envoyées par courrier doivent contenir une feuille sommaire démontrant le calcul des , une feuille indiquant les indicatifs contactés dans chaque mode sur chacune des bandes (dupe sheet), une feuille indiquant les multiplicateurs utilisés et le journal de bord. Le journal doit montrer l'heure, la bande, le mode, l'indicatif de la station contactée, les rapports échangés et les revendiqués pour chaque QSO. Les nouveaux multiplicateurs doivent être clairement indiqués dans le journal.

**Des formulaires d'inscription sont disponibles sur le site web de RAC au :**

<http://www.rac.ca/en/rac/programmes/contests>

Toute inscription contenant plus de 100 contacts devrait être soumise sous forme numérique. Le format électronique préféré est le format Cabrillo RAC. Les fichiers doivent être soumis en format text/ASCII. Bien que le comité du concours préfère les soumissions en format Cabrillo, nous continuerons à accepter vos journaux de bord électroniques générés par des versions antérieures de logiciels de concours, mais votre fichier doit être en format text/ASCII et contenir toutes les informations requises.

Comme il existe plusieurs logiciels gratuits supportant le concours RAC et pouvant générer un fichier Cabrillo acceptable, nous vous encourageons à en utiliser un. Le format Cabrillo RAC est décrit et sa disposition est illustrée en détail sur le site web de RAC au :

<http://www.rac.ca/en/rac/programmes/contests>

Les journaux de bord soumis sous forme numérique mais ne possédant pas d'entête Cabrillo complète devraient fournir une feuille sommaire avec les mêmes informations que pour les soumissions papier. La feuille sommaire standard fournie par les logiciels courants est généralement acceptable, mais vous devriez confirmer qu'elle contienne les mêmes informations que pour les soumissions papier.

Une entête Cabrillo correctement remplie se substituerait à une feuille sommaire pour les journaux soumis dans ce format. Veuillez s'il-vous-plaît vous assurer que vous vérifiez l'exactitude de l'entête et qu'elle soit complètement remplie. Nommez votre fichier avec votre indicatif et l'extension de fichier .LOG (par exemple votreindicatif.LOG). Si vous envoyez votre journal de bord par courriel, veuillez inclure le(s) fichier(s) **en pièce(s) jointe(s)**.

Ne copiez pas le fichier dans le texte de votre message, étant donné qu'il pourrait y avoir des problèmes avec la mise en page, rendant la tâche d'extraire votre journal plus difficile. Les gros fichiers peuvent être compressés en format .ZIP si nécessaire.

**Si vous avez besoin d'aide avec la préparation ou l'envoi de votre journal par courriel, veuillez contacter Sam Ferris : [ve5sf@rac.ca](mailto:ve5sf@rac.ca)**

Pour les résultats des éditions précédentes du concours, visitez le site web de RAC (<http://www.rac.ca>), dans la section concours.

Traduction par Ante Laurijssen, VA2BBW. Merci Ante!





**Bob Nash, VE3KZ**  
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The contest results provided in this column are courtesy of the Maritime Contest Club team:

Gary Bartlett, VE1RGB  
 Scott Nichols, VE1OP

For more contest information check out these online sites:

<http://www.hornucopia.com/contestcal/weeklycont.html>

<http://www.contesting.com>

<http://www.sk3bg.se/contest/>

<http://www.arrl.org/contests/calendar.html>

<http://www.arrl.org/contests/rate-sheet/about.html>

<http://www.cq-amateur-radio.com/awards.html>

The "Contest Calendar" at the end of this column is presented as a guide only. RAC and TCA do not necessarily endorse or support any of the contests or the accuracy of the information.

**Bands:** The 30, 17 and 12m bands are never used in any contest.

# THE SPORTS PAGE

## — THE CANADIAN CONTEST SCENE

### CQWW DX CLUB COMPETITION

Canadian Clubs continue to present excellent collective results in many contests including the CQWW DX SSB and CW combination.

In the last issue of TCA I highlighted some of the changes in rules being implemented this fall. Alas, I missed one that has the potential to make big differences in the Club Competition arena. The listing are divided into two groups, USA and DX. Canadian clubs are listed under DX, of course. The USA club rules remain the same.

The new DX club rules allow two alternative approaches. The first is the same as before, requiring submitting members to be within a defined circle. The second alternative allows the club to have members anywhere in their country! One can imagine the possibilities of a single Russian club or Brazilian club.

Combining the two powerhouse German clubs would make them unapproachable. Combining Canadian clubs could make Canada even more competitive in this contest pair, but relative to the others it remains at this time of writing, an open question.

### WRTC-2014

Preparations move on for World Radiosport Team Championship 2014.

At the time of writing this column those wishing to be Team Leaders are submitting their applications. Not all those with the top numbers may wish to participate so it is prudent for those near the top of the lists to apply as well. It also shows the Team Leaders a pool of available operators from which to choose a running mate. The third member, the Referee, is chosen from applications to be submitted by December 1.

For those coming to New England as visitors, a list of hotels is available on the WRTC website at <http://www.wrtc2014.org/>.

It is an interesting event to either participate in or to visit and an opportunity to meet the world's best testers.

### CONTEST CLUB ONTARIO

It was another great Meet & Greet occasion at the VE3EJ antenna farm for members of CCO. This was the 12th such annual meeting and also provided the opportunity to present the winners of the Ontario QSO Party with their trophies and the recipients of the CCO sCCore awards with their trophies and endorsements.

It was also time to thank two retiring members of the CCO Executive, Travis, VE3WO – one of the founding members of CCO – and Eric, VE3CR, a 10-year veteran of the Executive.

Bob, VE3CWU, and Rick, VE3MM, were welcomed to take over these positions of Secretary and Treasurer respectively. John, VE3EJ, Dave, VE3OI, Don, VE3XD, and yours truly carry on in their respective rolls of President, Vice-President, Web Master and Past-President.

Activity within the club continues to increase with 145 members contributing to scores in 2012 for one or more of the 39 weekend events that CCO uses for the internal award. Over half this number made their way from all across Ontario to the meeting this August.

Feel free to take a look at what CCO does at: <http://www.va3cco.com/>

Thanks to Peter, VE3HG, for the group photo at this year's event which is shown below.

73 Bob, VE3KZ





## ARRL SWEEPSTAKES CW 2012

Call	QSOs	Mult	Score	Class
VE7CC	1,174	83	194,884	B
VO1XX	1,113	83	184,758	U
VA7RR	1,073	82	175,972	A
VE6EX	971	83	161,186	A
VY1EI	935	82	153,340	M
VE7XF	855	83	141,930	U
VE3KI	853	83	141,598	UL
VE9HF	789	83	130,974	U
VE3TA	755	83	125,330	U
VE3MM	743	83	123,338	B
VA7ST	763	80	122,080	A
VE5ZX	702	83	116,532	A
VE7YU	688	81	111,456	A
VE1RGB	646	83	107,236	A
VE3UTT	653	82	107,092	U
VE2AWR	645	82	105,780	A
VE3EY	601	81	97,362	A
VE5SF	573	83	95,118	A
VE6BMX	606	78	94,536	A
VE5MX	565	83	93,790	U
VA3DF	588	79	92,904	Q
VE3RCN	556	82	91,184	A
VE3GFN	563	79	88,954	A
VE3ZI	536	81	86,832	B
VA3EC	544	79	85,952	A
VA3SB	506	82	82,984	Q
VE3TG	488	80	78,080	A
VE3IAE	478	80	76,480	A
VE4DR	464	80	74,240	ML
VE2EZD	408	83	67,728	U
VA2SG	430	77	66,220	A
VO1HP	400	82	65,600	U
VE3CX	436	75	65,400	B
VA2WA	415	70	58,100	A
VE3SMA	369	77	56,826	A
VE7KW	363	78	56,628	A
VE2FK	304	81	49,248	U
VE3EJ	332	74	49,136	A
VE1OP	324	74	47,952	U
VE7JKZ	326	73	47,596	A
VE4YU	279	74	41,292	A
VO1TA	234	73	34,164	A
VE4VT	214	79	33,812	UL
VE7NI	236	71	33,512	Q
VE3AAQ	254	65	33,020	A
VE3TW	250	64	32,000	A
VE6BIR	216	72	31,104	Q
VE3JTP	210	70	29,400	A
VA3FN	174	62	21,576	A
VE5GC	161	61	19,642	A
VE3XD	182	53	19,292	Q
VE3HG	166	55	18,260	Q
VY1JA	147	61	17,934	A
VE6AO	185	44	16,280	M
VA3RKM	139	54	15,012	Q
VE4MG	110	67	14,740	A
VE3MO	146	49	14,308	Q
VE3XAT	132	54	14,256	U
VA7KH	121	56	13,552	Q
VE5UF	127	47	11,938	B
VO1BQ	117	48	11,232	A
VE5AAD	106	51	10,812	A
VA3AMX	102	52	10,608	Q
VE9AA	100	48	9,600	Q
VY2LI	89	52	9,256	A
VE2AXO	95	47	8,930	A
VE2QV	86	40	6,880	A
VE6SQ	77	39	6,006	UL
VE7BGP	64	41	5,248	A
VE2KOT	46	28	2,576	Q
VE7IN	19	17	646	UL
VE7WO	20	15	600	B
VA3WR	17	15	510	Q
VE3XTI	17	14	476	Q
VE3SB	16	12	384	UL
VE9OA	10	11	220	A
VE3FU	8	8	128	B

## UKRAINIAN DX CONTEST 2012

Call	QSOs	Mult	Score	Class
VE1OP	532	138	306,912	SOAB HP CW
VA2WA	223	92	102,396	SOAB HP CW
VE9ML	131	65	62,660	SOAB LP MIX
VE1ZA	114	76	39,292	SOAB LP CW
VA1CHP	153	52	37,128	SO 15M MIX
VE9HF	190	47	27,777	SO 20M MIX
VE2FK	72	47	14,147	SOAB HP CW
VE3KAO	62	47	13,254	SOAB LP CW
VE3CWU	48	32	10,176	SOAB LP CW
VE9OA	52	38	9,804	SOAB LP MIX
VE1RGB	48	28	4,032	SOAB LP CW
VA6NJK	22	16	1,744	SO 20M MIX
VE3XB	25	16	1,360	SO 40M MIX
VE2KOT	6	5	85	SOAB QRP MIX

## WAE DX RTTY 2012

Call	QSOs	Mult	QTC	Score	Class
VA2UP	1,616	789	2,089	2,923,245	SOHP
VE7CC	1,486	763	992	1,890,714	SOHP
VA2AM	1,423	700	1,033	1,719,200	SOHP
VE2FXL	861	506	1,631	1,260,952	SOHP
VE2FK	896	524	1,317	1,159,612	SOHP
VA1CHP	885	494	1,324	1,091,246	SOLP
VE3KI	695	483	624	637,077	SOHP
VA7KO	590	440	721	576,840	SOHP
VE2EBK	489	430	697	509,980	SOLP
VA7ST	660	389	289	369,161	SOLP
VE4EAR	369	380	500	330,220	SOHP
VA3PC	397	324	621	329,832	SOHP
VE3JI	342	369	496	309,222	SOLP
VA7RY	515	342	343	293,436	SOLP
VE7CF	488	325	146	206,050	SOHP
VE7IO	382	232	239	144,072	SOHP
VA7AM	380	249	139	129,231	SOLP
VE3AJ	254	233	190	103,452	SOLP
VE7BC	293	217	117	88,970	SOLP
VE2LX	264	291	0	76,824	SOLP
VE5MX	129	177	219	61,596	SOHP
VE7AX	173	211	36	44,099	SOHP
VE6AMI	177	240	0	42,480	SOLP
VE1ZD	124	172	110	40,248	SOLP
VE3XAT	105	158	146	39,658	SOLP
VE3XD	130	130	114	31,720	SOLP
VE3MGY	194	163	0	31,622	SOLP
VE7HBS	222	102	37	26,418	SOHP
VA7XB	177	138	0	24,426	Multi-Op
VE3MCF	104	84	152	21,504	SOLP
VE9BWK	119	162	0	19,278	SOLP
VE6AX	107	161	0	17,227	SOLP
VE3RCN	100	134	0	13,400	SOLP
VE3CX	51	90	40	8,190	SOHP
VE6SQ	74	109	0	8,066	SOLP
VY2LI	36	89	30	5,874	SOLP
VE2EZD	33	78	19	4,056	SOHP
VE2QV	42	67	8	3,350	SOLP
VE2SG	24	53	10	1,802	SOHP
VE2NMB	26	51	0	1,326	SOLP
VE6FN	14	29	0	406	SOHP
VE3IRR	7	16	0	112	SOLP

## LZ DX CONTEST 2012

Call	QSOs	Mult	Score	Class
VE1OP	966	143	478,907	SOAB CW HP
VE9ML	792	148	446,072	MOMB LP MIX
VE1RGB	549	112	213,248	SOAB CW LP
VE1ZA	307	83	107,568	SOAB MIX LP
VE9HF	614	47	90,710	SO20M HP MIX
VA1CHP	312	32	34,144	SO15M MIX LP
VA3ATT	97	49	18,963	SOAB CW LP
VE2FK	112	40	15,000	SOAB CW HP
VA2EU	83	37	13,394	SOAB CW LP
VE9AA	244	25	12,100	SO10M MIX HP
VE2KOT	60	30	5,400	SOMB QRP MIX
VA7ST	69	24	5,256	SOAB CW LP
VA3GUY	19	14	1,008	SO20M LP MIX

## STEW PERRY TOPBAND 2012

Not released at press time

## ARRL NOVEMBER SWEEPSTAKES SSB 2012

Call	QSOs	Mult	Score	Class
VY2ZM	2,059	83	341,794	B
VE7CC	1,454	83	241,198	B
VE3ONN	1,445	82	236,980	U
VA7RR	1,392	83	231,072	A
VY1EI	1,289	83	213,808	U
VE5ZX	1,222	83	202,852	A
VE6EX	1,207	83	200,362	A
VA7ST	1,185	83	196,710	B
VO1MP	1,086	83	180,276	U
VE6BBP	947	82	155,308	B
VE3RZ	922	83	153,052	B
VE4VT	916	82	150,224	B
VO2WL	811	80	129,760	M
VE6BMX	783	81	126,846	B
VE5MX	755	83	125,330	U
VA3SK	748	83	124,168	M
VE3RCN	713	83	118,358	A
VE9AA	701	83	116,366	B
VE5SF	697	83	115,702	A
VE2NGH	674	83	111,884	U
VE3KI	642	82	105,288	B
VE3MGY	631	77	97,174	UL
VE9HF	632	74	93,536	B
VA7JW	602	77	92,708	B
VE3TW	544	82	89,216	A
VE3SGB	523	83	86,818	M
VE2EZD	442	82	72,488	U
VE2AWR	432	83	71,712	A
VA3DF	416	83	69,056	Q
VA3WU	395	82	64,780	A
VE8GER	442	73	64,532	A
VO1KVT	398	81	64,476	B
VA6NJK	351	81	56,862	U
VE3XTI	345	82	56,580	Q
VE5UO	367	77	56,518	A
VE3RX	339	83	56,274	A
VE3IAE	342	80	54,720	A
VE3TA	339	80	54,240	U
VE2HIT	327	79	51,666	A
VE3UZ	300	80	48,000	M
VE3EY	312	75	46,800	A
VE6RFM	292	80	46,720	U
VE9OA	311	75	46,650	ML
VE6SH	287	81	46,494	A
VE3ATX	282	81	45,684	A
VE5UF	345	65	44,850	B
VE4YU	276	78	43,056	A
VA6UK	260	82	42,640	B
VE3AOD	278	73	40,588	A
VE3VSM	281	67	37,654	UL
VE3HG	260	71	36,920	Q
VY2LI	244	72	35,136	A
VE6SQ	253	69	34,914	A
VE4RA	212	82	34,768	A
VE5AAD	216	77	33,264	A
VA2SG	272	59	32,096	A
VA3XH	201	76	30,552	B
VA3NW	205	73	29,930	A
VA3SIK	211	70	29,540	A
VE3HED	174	83	28,884	A
VA3IC	177	81	28,674	A
VE7JH	198	67	26,532	A
VE3AAQ	199	54	21,492	A
VA5LF	175	60	21,000	B
VE7AX	154	68	20,944	U
VO1TA	171	61	20,862	A
VE3XT	158	64	20,224	A
VE3DVY	160	63	20,160	Q
VA4HZ	148	63	18,648	A
VA3ZLT	121	76	18,392	A
VA3AH	125	64	16,000	A
VA3EEB	119	61	14,518	A
VA1GE	93	69	12,834	A
VA2UTC	114	54	12,312	Q
VE1SQ	114	50	11,400	A
VE2AXO	109	52	11,336	A
VE7NA	109	52	11,336	ML
VE3IGJ	102	50	10,200	Q
VE2EBK	105	47	9,870	A
VO1BQ	105	45	9,450	A
VE3BK	91	48	8,736	U
VE3IRR	81	49	7,938	A
VE3TU	81	42	6,804	A

VE3AJ	72	42	6,048	A
VE3AD	71	40	5,680	A
VE4DRK	55	36	3,960	A
VA3ZWT	55	32	3,520	A
VE3EJ	50	33	3,300	A
VE3ZI	42	31	2,604	B
VA4CQD	44	27	2,376	A
VE3EEU	49	23	2,254	A
VA6TAC	24	19	912	A
VE2PIJ	25	14	700	A
VA3RKM	16	14	448	Q
VA3AZA	8	8	128	A
VO1HP	9	7	126	U
VE9EX	5	5	50	A

## ARRL 160 METRE 2012

Call	QSOs	Mult	Score	Class
VY2ZM	1,547	136	587,928	C
VE3EJ	1,552	117	406,692	C
VE3TA	1,292	118	331,934	D
VA2EW	1,300	115	331,430	C
VE2OJ	1,208	108	277,128	D
VE3MMQ	940	108	223,884	C
VE3PN	804	96	166,368	C
VE3MGY	925	88	165,968	E
VE3CX	866	89	155,661	C
VE7CC	756	91	152,152	C
VE5UF	821	88	145,024	C
VE3YAA	811	85	139,315	D
VE9HF	610	91	119,301	D
VE6BBP	691	84	117,432	C
VE3FU	649	87	116,667	C
VE3XL	743	77	114,807	B
VE3NZ	589	73	85,629	C
VE3OSZ	536	74	79,476	B
VA2WA	453	65	59,085	D
VE3TG	452	62	55,924	B
VE6JY	312	83	53,286	D
VE3JM	326	76	51,452	C
VE3SB	370	63	46,305	B
VE9AA	308	66	41,580	C
VE7CA	287	64	37,184	E
VE3ADQ	277	68	37,128	B
VA3EC	324	54	34,506	B
VE3MM	275	58	32,480	C
VE1OP	183	62	26,660	D
VE3TW	231	56	26,040	B
VE3FAS	195	62	25,296	C
VA3KAI	233	54	25,218	B
VE3EY	241	51	24,429	B
VE3CV	233	51	23,409	A
VE3RCN	215	52	22,360	B
VE7CV	200	55	22,165	B
VE7JKZ	213	51	21,624	C
VE7VV	174	57	19,950	A
VE1RGB	193	46	17,894	B
VE1ZA	171	48	16,368	B
VE3UZ	162	48	15,456	C
VA2EU	138	46	12,420	B
VE6LB	116	54	12,312	C
VE3XAT	114	52	12,064	D
VA7ST	130	43	11,094	B
VE2AWR	149	36	10,656	B
VE9ML	134	38	9,880	B
VE9OA	133	36	9,540	B
VE3HG	133	34	8,840	A
VE3GFN	121	37	8,658	B
VE3CWU	122	33	7,788	E
VE2EZD	120	31	7,316	D
VA7MM	74	36	5,256	B
VE4YU	83	32	5,248	B
VA3RKM	73	23	3,312	A
VE4VT	47	26	2,392	B
VE2FK	47	21	2,037	E
VA3VW	44	21	1,848	A
VE3OIL	39	22	1,738	B
VE1JS	29	22	1,408	D
VE6EX	34	17	1,156	A
VA3ATT	15	10	300	B
VA3FN	11	10	220	B
VA7HZ	5	4	40	B
VY2LI	4	3	24	B
VE5MX	3	3	18	B



<b>ARRL 10 METRE 2012</b>						VE3MGY	46	9	1,548	C	A
<b>Call</b>	<b>QSOs</b>	<b>Mult</b>	<b>Score</b>	<b>Class</b>	<b>Power</b>	VE6KAD	35	21	1,470	B	B
VY2ZM	1,132	134	601,392	C	C	VA3RKM	25	16	1,408	A	A
VE3KZ	825	181	446,708	A	C	VE3TU	34	19	1,292	B	B
VY2TT	779	165	407,550	A	C	VE3FAL	23	13	1,196	C	A
VE7JH	1,101	90	394,200	C	C	VO1BQ	20	12	816	A	B
VE3MMQ	604	162	327,564	D	C	VY2MP	24	16	768	B	B
VE7XF	832	86	284,488	C	C	VE3EEU	25	14	644	B	B
VE9AA	616	107	261,508	C	C	VA3DLJ	19	12	456	B	B
VA7BEC	858	113	245,436	E	B	VA2RIO	17	10	340	A	B
VE6WQ	677	81	217,728	D	C	VE2PIJ	12	11	264	B	B
VE1OP	518	105	216,300	D	C	VE2KOT	3	2	24	C	A
VE3YAA	461	127	204,724	D	C	VE2JT	4	3	24	B	B
VE3EJ	518	98	201,488	D	C	VE4DRK	1	1	2	B	B
VE9HF	533	81	171,720	C	C	<b>TARA RTTY MELEE 2012</b>					
VA7DZ	563	105	162,330	E	B	<b>Call</b>	<b>QSOs</b>	<b>Mult</b>	<b>Score</b>	<b>Class</b>	
VE5UF	445	91	160,888	A	C	VE6AO	389	70	27,230	MOH	
VO1TA	495	80	157,440	C	C	VE2FK	203	61	12,383	SOH	
VE6BMX	483	91	139,958	A	B	VA7ST	194	58	11,252	SOL	
VE3AD	393	130	138,840	D	C	VA7AM	204	49	9,996	SOL	
VE3CX	376	98	131,516	A	C	VA2SG	161	58	9,338	SOL	
VE6AO	675	90	129,420	D	C	VE3XAT	114	51	5,814	SOL	
VE5ZX	362	96	121,152	A	B	VE3EBK	122	42	5,124	SOL	
VE1RGB	381	79	119,132	C	B	VE7BSM	88	33	2,904	SOL	
VE5KS	272	105	77,700	A	B	VA6NJK	68	33	2,244	SOL	
VA7ST	360	54	76,896	C	C	VE1OP	70	29	2,030	SOH	
VE3FGU	233	66	61,248	C	B	VE6KAD	52	28	1,456	SOL	
VE7SQ	317	49	59,388	D	C	VE9AA	38	27	1,026	SOL	
VA2WA	210	70	58,240	C	B	VE2QV	38	24	912	SOL	
VE3TW	255	79	57,038	A	B	VE2NMB	42	15	630	SOL	
VE7CV	238	58	54,288	C	B	VE3VID	21	16	336	SOL	
VE7JKZ	289	45	50,940	C	B	VA7HZ	19	15	285	SOL	
VE3XAT	169	80	48,640	D	C	VO1BQ	14	14	196	SOL	
VE3OM	189	63	47,628	C	B	VE3AJ	11	7	77	SOL	
VE8GER	405	58	46,864	B	B	VE7VGP	9	8	72	SOL	
VE7IO	217	51	41,412	D	C	<b>OK/OM DX CW 2012</b>					
VY2OX	165	55	36,300	C	A	<b>Call</b>	<b>QSOs</b>	<b>Mult</b>	<b>Score</b>	<b>Class</b>	
VE3IAE	173	50	34,600	C	B	VE9ML	359	1,077	260,634	M1	
VE4VT	141	76	33,744	A	C	VE1ZA	304	912	200,640	SOLP	
VE3FH	167	57	32,262	A	B	VE1RGB	189	567	89,586	SOLP	
VA6UK	300	53	31,482	B	C	VE1OP	117	351	35,100	SO HP	
VA6NJK	263	60	31,440	B	C	VE9HF	119	357	34,986	SO HP	
VY2LI	203	63	31,248	A	B	VE9OA	108	324	27,864	SOLP	
VE3MIS	268	58	30,740	D	C	VE9AA	87	261	15,921	SO10M HP	
VA7MM	151	51	29,376	C	B	VA3ATT	59	177	9,912	SOLP	
VE2EBK	144	72	27,504	A	B	VE3OM	56	168	8,736	SOLP	
VA3AR	137	52	24,752	A	B	VE3CWU	51	153	6,732	SO20M LP	
VE6AX	137	62	21,576	E	B	VE2KOT	24	72	1,656	SO QRP	
VE2EZD	121	43	20,468	C	C	<b>OK DX RTTY 2012</b>					
VE9ML	107	50	18,400	A	B	<b>Call</b>	<b>QSOs</b>	<b>DXCC</b>	<b>OK/OL</b>	<b>Score</b>	<b>Class</b>
VA7XB	125	37	18,352	E	B	VA2UP	975	174	113	903,763	SOMB HP
VA3MTT	176	52	17,992	B	B	VE2FXL	419	76	20	100,416	SOMB HP
VE1JS	100	61	17,812	A	C	VE2FK	331	33	84	84,537	SOMB HP
VE7WO	156	28	17,248	C	C	VE2EBK	299	30	82	82,824	SOMB LP
VE5MX	104	43	16,942	D	C	VE3FH	254	35	72	72,688	SOMB LP
VE3EY	131	30	15,600	C	C	VE3XAT	279	18	68	68,250	SOMB HP
VE2AXO	97	44	14,168	E	B	VA2SG	256	23	40	40,527	SOMB LP
VA3KAI	105	33	13,860	C	B	VA7ST	377	4	36	36,173	SOMB HP
VE1ZA	153	43	13,072	B	A	VY2MP	141	9	16	16,320	SOMB LP
VA5LF	80	45	12,150	A	C	VA3XH	136	9	16	16,128	SO 40M
VE3VSM	90	37	10,360	A	B	VE3MGY	151	20	6	6,786	SOMB LP
VA7IR	177	30	10,320	B	B	VA3EF	36	21	8	5,916	SO 80M
VA3PC	100	43	8,600	B	C	VE2NMB	59	27	12	4,680	SOMB LP
VA3EC	64	28	7,168	C	B	VY2LI	64	3	4	4,674	SO 40M
VE6EC	85	39	6,474	B	B	VE9BWK	47	9	2	2,790	SOMB LP
VE2FK	63	26	6,344	D	C	VE4EAR	72	21	1	2,398	SOMB HP
VE2HIT	89	36	6,336	B	B	VE2KOT	54	7	2	2,050	SOMB LP
VE4MG	59	37	5,994	A	B	VE6KAD	73	12	0	1,224	SOMB LP
VE3JM	47	34	5,984	A	C	VE6AMI	37	17	3	1,140	SOMB LP
VE3RCN	61	27	5,508	A	B	VE3VID	15	17	4	68	SOMB LP
VE7EMI	72	35	5,040	B	B	VE3NRT	5	2	0	10	SO 15M
VE7VAW	70	36	5,040	B	B	<b>KY QSO Party 2012</b>					
VA7AM	96	22	4,048	B	B	<b>Call</b>	<b>Score</b>	<b>Call</b>	<b>Score</b>		
VE3BK	48	27	3,780	D	C	VA2SG	2,096	VE7CV	780		
W4/VE3HED	51	28	2,744	A	B	VE9HF	1,487	VA3GKO	700		
VE5GC	34	22	2,728	C	B	VE3US	794	VE9AA	540		
VA3WU	62	22	2,684	B	B			VE3PYJ	512		
VA3FN	46	14	2,576	C	B						
VE9OA	33	23	2,530	A	B						
VE7BGP	33	24	2,304	A	B						
VE3AAQ	28	20	1,680	A	C						
VE3/KD2HE	40	11	1,672	E	B						

**CQ WW DX CW 2012**

Call	QSOs	Zones	Countries	Score	Class
VE3EJ	9,211	201	734	21,367,555	MULTI-TWO
VY2ZM	6,601	186	720	15,045,942	MULTI-ONE
VY2TT	6,265	145	524	10,365,486	SO HP ALL
VE6JY	6,020	165	515	9,661,440	MULTI-TWO
VE7FO	5,875	160	486	8,511,696	MULTI-MULTI
XL3A	5,072	144	497	7,892,633	SO HP ALL
VE3JM	4,931	147	452	7,265,271	SO HP ALL
VE2EKA	4,913	141	491	7,264,208	SA HP ALL
VE3YAA	3,664	156	544	5,964,700	MULTI-ONE
VC2T	4,298	140	399	5,770,534	SO HP ALL
VE7SV	3,578	164	459	5,243,168	SO HP ALL
VE7GL	3,649	153	426	4,913,394	MULTI-ONE
VE3UTT	2,592	158	542	4,579,400	SA HP ALL
VE3CR	2,128	156	531	3,691,938	MULTI-ONE
VE1OP	2,275	144	485	3,324,265	SA HP ALL
VE3MMQ	2,183	131	465	3,282,768	SA HP ALL
VE3RZ	1,900	138	454	2,797,200	SA HP ALL
VE9HF	2,175	112	360	2,476,584	SA HP ALL
VE3BR	1,766	138	421	2,410,967	SA LP ALL
VE6SV	2,114	143	345	2,383,880	SO HP ALL
VE3KI	1,947	116	379	2,280,465	SA HP ALL
VD1M	1,580	127	433	2,243,920	SA HP ALL
VA7ST	2,346	104	248	1,821,952	SO HP ALL
VE5ZX	1,686	107	278	1,345,960	SO LP ALL
VO2TM	1,963	68	233	1,336,440	SO LP ALL
VA7KO	1,352	133	311	1,332,000	SA HP ALL
VE3XAT	1,135	97	346	1,255,905	SA HP ALL
VA2SG	1,538	80	259	1,214,637	SO LP ALL
VA2AM	865	130	459	1,172,699	SA HP ALL
VE6EX	1,901	89	156	944,965	SO LP ALL
VE2EZX	979	93	283	926,088	SA HP ALL
VE1JBC	1,005	78	281	925,502	SA HP ALL
VE7IO	1,613	97	173	857,790	MULTI-TWO
VE2FK	1,021	71	250	806,673	SA HP ALL
VE2AWR	940	83	249	786,840	SO LP ALL
VE7JKZ	1,026	105	189	712,950	SO HP ALL
VA7OM	622	124	301	654,500	SO HP ALL
VE3FH	713	92	244	587,664	SO LP ALL
VE3CV	541	105	306	569,235	SA LP ALL
VE3AAQ	1,523	32	110	557,066	SO HP 15M
VE1ZA	1,085	35	123	454,724	SA LP 20M
VE9AA	1,296	27	110	432,509	SO HP 10M
VE3CX	1,261	33	110	421,993	SA HP 40M
VE7AB	972	74	126	409,600	MULTI-ONE
VA3EC	741	67	152	367,920	SO LP ALL
VE6AO	873	69	134	356,265	MULTI-ONE
VE3OM	425	81	200	319,216	SO LP ALL
VA2EU	491	69	209	309,970	SO LP ALL
VE6LB	458	95	193	298,368	SA HP ALL
VE7VR	613	82	129	290,125	SA HP ALL
VE1RSM	459	71	187	285,864	SO LP ALL
VE7AX	483	81	174	280,245	SA HP ALL
VE2EBK	385	83	207	276,950	SA LP ALL
VE2BWL	468	69	190	271,432	SA LP ALL
VA3ATT	439	68	179	266,266	SO LP ALL
VE3CWU	470	67	160	252,878	SA LP ALL
VE7BZR	502	77	129	233,810	SO LP ALL
VE7CA	644	61	99	233,280	SA LP ALL
VA3DX	399	68	175	231,579	SA HP ALL
VE3GTC	407	60	157	220,906	SO QRP ALL
VE3HG	356	48	167	212,635	SA QRP ALL
VE9BK	602	30	106	201,416	SA LP 40M
VE5SF	519	58	126	200,744	SA LP ALL
VE7XF	823	29	67	186,048	SO HP 10M
VE6WZ	436	36	120	176,592	SA HP 40M
VE3IAE	556	26	98	170,500	SA LP 20M
VA3AMX	398	57	132	168,021	SA QRP ALL
VE2LX	555	61	189	165,500	SO LP ALL
VE4YU	322	71	127	163,944	SO LP ALL
VE3OTL	523	77	177	162,052	SO LP ALL
VE5UF	596	28	89	154,089	SA HP 10M
VA7CRZ	366	74	117	152,418	SA LP ALL
VE6BMX	718	27	70	151,417	SO LP 15M
VE3TG	428	25	99	148,180	SO LP 15M
VA3XOV	322	62	119	134,302	SO LP ALL
VE2FXL	259	68	123	122,240	SA HP ALL
VE6HPT	306	71	107	117,836	SO LP ALL
VA1CHP	345	27	107	115,642	SA LP 15M
VE3ZI	625	19	66	107,100	SO HP 160M
VE1AL	366	24	86	100,650	SO LP 10M
VE2QV	331	45	90	99,900	SO LP ALL
VE7SQ	229	75	125	98,200	SO HP ALL

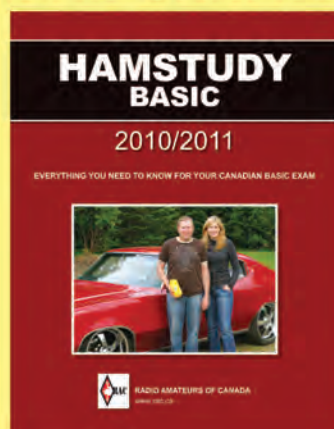
VE7WO	607	25	49	97,384	SO HP 15M
VY2LI	235	53	117	97,070	SO LP ALL
VE2AXO	268	45	109	85,778	SA LP ALL
VE3XD	281	25	82	82,069	SA QRP 15M
VA7DXC	259	55	63	77,762	SA LP ALL
VA7RN	269	57	71	77,440	SO LP ALL
VE9OA	240	49	125	74,124	SO LP ALL
VE3PN	521	15	51	73,986	SO HP 160M
VO1HP	176	51	110	73,577	SA HP ALL
VA3FN	239	42	90	72,204	SO LP ALL
VA7ND	367	27	69	71,328	SO LP 20M
VE3MO	321	30	70	71,200	SO QRP ALL
VE2KOT	215	44	91	66,825	SO QRP ALL
VE3WZ	199	55	116	66,348	SO QRP ALL
VE5KS	184	61	109	64,090	SA LP ALL
VE7CV	314	27	56	63,661	SO LP 15M
VE7IN	159	68	81	58,855	SA LP ALL
VA3KA	207	24	88	58,240	SA HP 40M
VA7ZT	136	58	112	57,970	SO LP ALL
VA3MW	152	55	97	57,000	SA HP ALL
VE1ZJ	369	14	56	56,770	SO HP 160M
VE3TW	157	39	90	55,341	SA LP ALL
VA3DDX	153	43	103	53,582	SA LP ALL
VE3THX	189	27	84	53,502	SA LP 15M
VA7XB	173	52	77	53,277	MULTI-ONE
VA6AM	242	38	56	48,034	SA LP ALL
VA5LF	135	54	68	39,528	SO HP ALL
VA1GE	156	55	95	33,450	SO HP ALL
VY2SS	308	16	44	33,180	SO HP 40M
VY1EI	196	22	46	32,776	SA HP 10M
VA3GUY	196	22	62	32,172	SO LP 20M
VA3AR	168	32	58	30,870	SO HP ALL
VY2OX	157	21	58	30,652	SO QRP 10M
VA3EF	86	45	76	28,314	SO HP 15M
VE7DZO	105	42	52	26,978	SO LP ALL
VE3WDM	114	30	73	25,132	SO QRP ALL
VE1DT	88	27	62	21,627	SA HP ALL
VE9ML	116	20	59	21,330	SA LP 10M
VE3RCN	124	35	44	20,303	SO LP ALL
VE3FJ	110	19	48	19,832	SO LP 10M
VE3ZT	133	19	56	19,050	SO LP 10M
VE6GJ	109	43	64	17,869	SO LP ALL
VA3RJ	92	22	55	17,787	SO QRP 15M
VE3CW	103	16	45	16,287	SO QRP 15M
VA7VJ	86	41	46	16,008	SO LP ALL
VE5AAD	101	22	47	15,594	SO LP 20M
VE5UO	84	36	53	14,596	SA LP ALL
VE7BGP	96	35	38	13,432	SO LP ALL
VE5GC	182	14	20	11,764	SO LP 10M
VE7VQ	101	24	34	10,904	SA QRP 15M
VE3MGY	256	8	9	7,769	SA LP 160M
VE2JR	81	28	44	6,696	SO LP ALL
VO1TA	62	8	30	6,270	SO LP 160M
VE3EP	56	19	33	5,720	SO LP ALL
VE7TK	53	16	18	4,046	SA HP 80M
VE6SQ	48	17	11	1,708	SO LP ALL
VE3IRR	30	11	9	1,240	SO LP ALL
VE1JS	17	7	11	702	SA HP 160M
VA2BBW	13	11	13	672	SA QRP ALL
VA3WPV	51	3	2	500	SO QRP 80M
VE9BWK	21	12	10	352	SO LP ALL
VA7HZ	10	6	6	324	SO LP ALL
VE3AJ	5	3	2	20	SA LP 40M
VE1JF	6	2	2	16	SA LP 160M

**CROATIAN CW 2012**

Call	QSOs	Mult	Score	Category	Power
VE9HF	736	164	418,036	SOAB	LOW
VE1OP	487	133	204,953	SOAB	LOW
VE1ZA	352	118	145,140	SOAB	LOW
VE9ML	193	90	59,490	SOAB	LOW
VE1RGB	173	62	33,976	SOAB	LOW
VE3DZ	172	32	27,648	SO 80M	LOW
VE3KZ	268	48	24,192	SO 15M	HIGH
VE3TA	142	51	22,134	SOAB	HIGH
VE9OA	126	63	11,907	SOAB	LOW
VE9AA	142	32	10,432	SO 10M	HIGH
VA3ATT	71	43	10,277	SOAB	LOW
VA3EC	82	35	8,645	SOAB	LOW
VE2FK	37	24	4,008	SOAB	HIGH
VE3FJ	37	18	1,836	SO 15M	LOW
VE3CX	25	16	736	SOAB	HIGH
VA3FN	10	7	322	SO 40M	LOW



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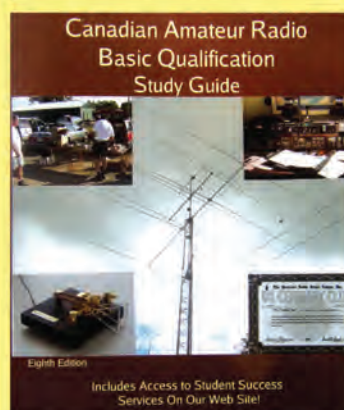
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## CONTEST CALENDAR FOR NOVEMBER, DECEMBER AND EARLY JANUARY 2014

Contest Name	Start	End	Web Address
Ukrainian DX Contest	1200z Nov 2	1200z Nov 3	<a href="http://www.ucc.zp.ua/">http://www.ucc.zp.ua/</a>
ARRL Sweepstakes CW	2100z Nov 2	0300z Nov 4	<a href="http://www.arrl.org/sweepstakes">http://www.arrl.org/sweepstakes</a>
High Speed CW (Part 1)	0900z Nov 3	1100z Nov 3	<a href="http://hsc.lima-city.de/en/contests.html">http://hsc.lima-city.de/en/contests.html</a>
High Speed CW (Part 2)	1500z Nov 3	1700z Nov 3	<a href="http://hsc.lima-city.de/en/contests.html">http://hsc.lima-city.de/en/contests.html</a>
Japan Int. DX SSB	0700z Nov 9	1300z Nov 10	<a href="http://jidx.org/jidxrule-e.html">http://jidx.org/jidxrule-e.html</a>
WAE DX RTTY	0000z Nov 9	2359z Nov 10	<a href="http://waedc.de/">http://waedc.de/</a>
OK/OM DX CW	1200z Nov 9	1200z Nov 10	<a href="http://okomdx.crk.cz/">http://okomdx.crk.cz/</a>
Kentucky QSO Party	1400z Nov 9	0200z Nov 10	<a href="http://www.wkdx.com/mainsite/">http://www.wkdx.com/mainsite/</a>
ARRL Sweepstakes SSB	2100z Nov 16	0300z Nov 18	<a href="http://www.arrl.org/sweepstakes">http://www.arrl.org/sweepstakes</a>
LZ DX Contest	1200z Nov 16	1200z Nov 17	<a href="http://lzdx.bfra.org/">http://lzdx.bfra.org/</a>
NAQCC Sprint	0130z Nov 21	0300z Nov 21	<a href="http://naqcc.info/">http://naqcc.info/</a>
CQWW DX Contest CW	0000z Nov 23	2359z Nov 24	<a href="http://cqww.com/">http://cqww.com/</a>
ARCI QRP Topband Sprint	0000z Nov 28	0600z Nov 28	<a href="http://www.qrparci.org/">http://www.qrparci.org/</a>
ARRL 160m Contest	2200z Dec 6	1600z Dec 8	<a href="http://www.arrl.org/160-meter">http://www.arrl.org/160-meter</a>
TARA RTTY Melee	0000z Dec 7	2359z Dec 7	<a href="http://www.n2ty.org/">http://www.n2ty.org/</a>
NAQCC Sprint	0130z Dec 11	0300z Dec 11	<a href="http://naqcc.info/">http://naqcc.info/</a>
ARRL 10m Contest	0000z Dec 14	2359z Dec 15	<a href="http://www.arrl.org/10-meter">http://www.arrl.org/10-meter</a>
ARCI Holiday Spirits HB Sprint	2000z Dec 15	2359z Dec 15	<a href="http://www.qrparci.org/">http://www.qrparci.org/</a>
OK DX RTTY	0000z Dec 21	2359z Dec 21	<a href="http://www.crk.cz/ENG/DXCONTE#OKRTTY">http://www.crk.cz/ENG/DXCONTE#OKRTTY</a>
Croatian CW Contest	1400z Dec 21	1400z Dec 22	<a href="http://www.hamradio.hr/">http://www.hamradio.hr/</a>
WW Iron Ham Contest	1200z Dec 28	1159z Dec 29	<a href="http://www.arauariadx.com">http://www.arauariadx.com</a>
RAC Winter Contest	0000z Dec 28	2359z Dec 28	<a href="http://www.rac.ca/en/rac/programmes/contests/">http://www.rac.ca/en/rac/programmes/contests/</a>
Stew Perry Topband Challenge	1500z Dec 28	1500z Dec 29	<a href="http://www.kkn.net/stew/">http://www.kkn.net/stew/</a>
SARTG New Year's RTTY	0800z Jan 1	1100z Jan 1	<a href="http://www.sartg.com/">http://www.sartg.com/</a>
ARRL RTTY Roundup	1800z Jan 4	2359z Jan 5	<a href="http://www.arrl.org/rtty-roundup">http://www.arrl.org/rtty-roundup</a>
NA QSO Party CW	1800z Jan 11	0600z Jan 12	<a href="http://www.ncjweb.com/">http://www.ncjweb.com/</a>

Note: In the above chart an \* indicates Local Times

# SECTION NEWS

## THE RAC FIELD ORGANIZATION FORUM

### MESSAGE FROM THE RAC CHIEF FIELD SERVICES OFFICER

Two days from now, I leave for Ancaster, Ontario for the 2013 RAC Annual General Meeting. Many of the folks that I will meet there I already know by email, telephone and Skype.

The communication piece that we chose three years ago has succeeded in bringing RAC members closer together, and we now have Section Managers meeting by webinar every month, sharing ideas, best practices etc.

There are more RAC members speaking to each other from coast to coast than ever before in our history.

Three years ago we began the Field Organization Review Project, and the Training Specification Working Group initiative. To date both programs continue, although many files that required our attention have delayed the process. That said, we have agreed on a new ARES Mission Statement and Vision, both of which are posted on our website.

One of the key changes that we sought was website improvements. With the appointment of Paul, VO1PRB, as Chief Information and Technology Officer, came many improvements by his team and we now have a section of the RAC website where Section Managers can post items of interest, and Section ARES leaders can report their activities.

Many thanks Paul and crew.

*Doug Mercer, VO1DTM CEC  
Chief Field Services Officer*

community as a whole works harder emergency communications would gain the respect of government. If you want to be part of emergency communications please join in. If you don't want to be part of emergency communications please don't join, or throw up road blocks or cause problems for those who do. Remember too that when an event occurs if you are barred from participation because you "don't meet the rules" don't be angry at anyone but yourself.

I commend those Amateurs who make the best of what they can during simulated emergency exercises. Many times, even though not "officially" written into the exercise, Amateurs are there to show their capability and availability. Sometimes too, if it is a multi-agency exercise, some agency wants Amateur Radio while others deny its existence. Because this happens an official script or plan is not written for Amateur Radio and things are done on the fly. Afterwards there is criticism. If you participate in an exercise and then submit or partake in a debriefing, I would ask that you keep the following in mind. There is nothing wrong with making your feelings known, but it should be done in a professional and constructive manner. Before being critical try and find out the circumstances under which the exercise was conducted. This usually answers a lot of questions. This procedure will allow valid comments, provide food for thought, and show respect for everyone involved. Remember folks involved in ARES have a common purpose.

*The following report was submitted by  
Bob Longmore, VE7ZA,  
DEC Mid Vancouver Island:*

On Sunday June 9, Merrick Grieder, VA7VM, an Emergency Coordinator from the Comox Valley and valued member of Search and Rescue, as in past years, organized Amateur



**CHIEF FIELD SERVICES OFFICER**

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safety communications for the annual Edge to Edge Marathon. The marathon draws participants from around the world with a scenic course along the beach and highway that connects the towns of Tofino and Ucluelet on the west coast of Vancouver Island.

A number of the Amateurs who are members of the Canadian Rangers Militia are trained in first aid. Mike Sheppard, VE7PRT, a local Canadian Coast Guard radio operator set up at the marathon finish line as net control and was in contact with race officials.

As in previous years, VA7VM held a briefing for the communications team the evening before the marathon. Individual operators were assigned to the various refreshment stations along the course to provide the marathon officials with progress reports as well as providing calls for first aid response when required. One of the more interesting calls during the race happened when – due to the course passing through a section of the Pacific Rim National Park – the Park Rangers asked radio operators to advise the various stations to be on the lookout for a bear that had been reported close to the course. The bear decided not to join the marathon.

One of the many positive aspects of Amateur Radio at this event was the interest that a number of Park Rangers have in obtaining their Amateur certification.

On a more serious note, repeater communications was provided through the courtesy of the Island Trunk System and a link to that

### BRITISH COLUMBIA/ YUKON:

SM Paul Giffin, VA7MPG  
A/SM Ron McFadyen, VY1RM  
A/SM Neil King, VA7DX  
STM Al Ross, VE7WJ  
SEC Fred Orsetti, VE7IO  
SEC Terry Maher, VYIAK  
(Yukon)  
OBM Bill Foster, VE7WWW  
OOC: Dennis Wight, VE7IJJ  
ACC: Karla Wakefield, VA7KJW

### JULY-AUGUST 18 REPORT:

Members of the Nanaimo Amateur Radio Association and the Coast Emergency Communications Association assisted with communications again this year at the Annual Nanaimo Bath Tub Race. This is an annual event that requires both Amateur and marine communication. Radio traffic consists of safety and race developments. Multiple stations are established and some lucky Amateurs get a helicopter ride out to a light station for the event. Once again this year the race was a success and there were no significant incidents.

The Quarter Century Wireless Association has set up a station, VE7QCV, at the Burnaby Village Museum. In addition they had radio repair and construction projects every Wednesday from July 3 to August 28. From reports received there was a lot of interest from the young people. A lot of work done

by these folks and congratulations on the success.

In May the Amateur community of British Columbia lost Bill Slaughter, VE7WS, of Burnaby Radio. Bill helped many individuals and groups in BC and other parts of Canada. He will be missed.

I was recently on the north and central coast of British Columbia. While stopped at one of the busier marinas on the central coast I had occasion to watch two different couples with satellite phones try and make them work. Both were very upset with their providers and the service. One couple couldn't make their phone work at all despite a check sheet. The other reported they had been out two weeks and their connections were short lived and infrequent. Both couples were from outside Canada. One couple was thinking of heading back home as they needed to be connected. Internet and cell service on a large part of the north and central coast is best described as non-existent. I would have offered Amateur Radio, but the location did have phone and Internet service which was provided by Telus. It got me thinking, if only Amateur Radio could get the PR folks from the satellite companies ARES would be off to the races.

I often wonder how it is that ARES has the respect and cooperation of various levels of government in the United States. I know they too have their issues, but who doesn't. It is interesting to see how Amateur Radio is part of real and simulated emergency exercises. Radio rooms with Amateur equipment are fully equipped and operational in Emergency Command Centres. In many parts of Canada Amateur Radio is not even part of the plan never mind being part of the Command Centres or supported by various levels of government.

I wonder too if part of the problem in Canada with emergency communications is not the fault of Amateurs themselves. I would suggest that the days of just showing up at a crisis or disaster are gone. Whether we like it or not, whether we choose to blame lawyers or administrators or anyone else is not the point. The point is there are now rules for emergency communications and the Amateur community needs to embrace, respect and, where possible, try to make these rules work to our benefit. In addition the Amateur community needs to be up-to-date with the latest methods of transferring of information. Maybe if the Amateur



system was provided by Mike Sheppard, VE7PRT, that improves communications in some areas of the course.

The following Amateurs donated their time and expenses to participate in this project: Merrick Grieder, VA7VM; David Payne, VE7DPY (Ranger Sgt); Mike Sheppard, VE7PRT; Bernie Herbert, VA7PRD; Bob Longmore, VA7ZA; Walt Isaacson, VA7ANI; Myles Morrison, VA7TRR (Ranger); Everett Watson, VA7AAO (Jr Ranger); Lawrence Charnell, VE7LBL (Ranger).

### Operation Nanook:

On the first weekend in August Amateurs in BC, Alberta, Oregon, Washington Alaska and the Yukon participated in Operation Nanook. This was a simulated emergency exercise that involved an interface fire in the Whitehorse area.

The exercise had a large military component. The role of Amateur Radio was very limited. Having said that it was a good exercise in that identified some communications issues in BC, and these issues either have been or are being addressed. While it was not the most exciting exercise from the Amateur point of view, it was good to confirm our ability to communicate between jurisdictions with both government and non-government stations and identify some weaknesses in the system. The exercise was also the first of many steps in the development of the communications portion of the Pacific Northwest Emergency Management Agreement.



The photo shows the command vehicle from the state of Alaska. As the Deputy Director of Homeland Security for the State of Alaska noted they have all the latest technology, but ham and radio operators are often the backbone of radio communications. Amateur operators from Alberta, British Columbia and several US states participated in the exercise.

I am not receiving many reports of Amateur activity in the section. I would ask if you have something of interest coming up please let me know and I will ensure it is added to the section website at <http://www.va7mpg.ca>. If you would like something added to the section dispatch or the website please forward it to me at [www.va7mpg@gmail.com](mailto:www.va7mpg@gmail.com).

– 73, Paul, VA7MPG

### Public Service Honour Roll

#### July:

VA7MPG 71, VE7GN 140, VE7WJ 86, VE7WWW 134.

#### August:

VA7MPG 186, VE7GN 215, VE7WJ 90, VE7WWW 157.

#### Bulletins:

July 18

August 36

### MANITOBA:

SM: Jan Schippers, VE4JS

STM: Jan Schippers, VE4JS

SEC: Vacant

DECs: Jeff Dovyak, VE4MBQ

(Capital Region and CanWarn);

Gord Snarr, VE4GLS (South-East

Central Region / South-West

Region); Wayne Warren, VE4WR

(North Region and Special Projects);

Vacant (North-Eastern Region);

Vacant (North-West Region);

EC Ron Wliscroft, VE4QE (Selkirk

and District); Bill Boskwick VE4BOZ

for RM of Grey, RM of Dufferin &

Town of Carman

### JULY-AUGUST SM REPORT:

I hope everyone had a good summer. The International Hamfest was held at the Peace Gardens on July 12, 13 and 14. This was the 50th anniversary and the event was well attended. The MARM Hamfest was held at the Agricultural Museum grounds in Aston on August 9 and 10. The event was well attended with lots of good stuff to buy at the fleamarket.

David Rosner, VE4DAR, is back as a Head Instructor. Basic Short Course 4 just finished and 11 individuals wrote the exam and nine passed. BSC5 is underway with another 19 students enrolled.

### Winnipeg ARES

Jeff Dovyak, VE4MBQ

Twenty-three Amateurs coordinated by Craig, VE4CDM, provided volunteer communications for the RCAF Run on Sunday, May 26. Participants were VE4s: HQ, STS, DJS, TG, TRO, BOY, SBS, ANF, KAZ, SE, HAH, GKS, GWB, SCH, HK, MMG, CHT, BN, KEH, DLA, CDM and Jeffrey Kazuk.

ALERT-110 took place on June 10, which was a Telephone Fan-Out asking Winnipeg ARES members to monitor a particular frequency for approximately 90 minutes due to approaching severe weather. Jim, VE4SIG, gave us an interesting presentation on CHIRP at our late June General Meeting. Aside from our ongoing CanWarn Program things were operationally quiet over most of the summer. Colonel Gary Solar provided us with a different perspective of Sir William Stephenson at our August General Meeting. Many of you who may know of Sir William as "Intrepid" probably were not aware of his successful background as a very successful international entrepreneur. A future presentation will cover the "spy stuff".

On June 8, the Brandon ARC's entry in the Brandon Travellers Day Parade won a \$100 second place Prize. The car is a 1982 Chrysler LeBaron convertible equipped with a PA sound system, driven by Rick Jones, VE4AV, and supplied by Rick's son in law Curtis Keber.



In the backseat was a 5.3 to 1 scale model of a Hy-Gain TH-3RS beam antenna. The beam rotated with a model ham hanging on to the boom (AKA Ken) and a model XYL (AKA Barbie) climbing the tower to rescue Ken. She never quite gets there, for, as she nears the top, she slips down the ladder and begins her rescue attempt all over again.

The windmill tower, dolls, Canadian flag and music were supplied by VE4AV. The animation mechanism and scale model antenna were supplied by George Moore, VE4MSM. Charlie Bailey, VE4LB, supplied CW interspersed with music over the PA system. Ken's wardrobe was made by Carol Jones, Rick's XYL. We all had a lot of fun and it was a fine day for the parade.

– George Moore, VE4MSM and Rick Jones, VE4AV

Thanks to AEC Norman Coull, VE4EH, for being on-call for Winnipeg ARES when I was away in July and August.

We would like to welcome several new Winnipeg ARES members: Patricia Haertel, VE4PEH, Pete Haertel, VE4PH, Garry Frankel, VE4VD and Paul Copio, VE4TSY.

### Manitoba Marathon:

Jeff Dovyak VE4MBQ

Eighty-three Amateur operators and five non-Amateur support volunteers covered a variety of positions at the 35th Manitoba Marathon held on Father's Day, June 16.

Our volunteers were: VA4s: CAT, DON, MAC, IAM, AJG.

VE4s: HK, DJS, BOY, DAE, VZ, STL, EDH, JDH, MHZ, GLS, SE, SBS, LYN, PPG, CEU, JLO, JBL, AIN, PH, PEH, MMG, UG, ANF, LIT, TSY, RIC, EIH, QB, NQ, HQ, ABY, GZ, SCH, CHT, SYM, TRO, HAY, AJO, KU, BN, UK, APJ, MWH, TTH, RST, AND, CZK, EH, HAZ, RAI, STS, ESX, ACX, FHS, CDM, JNF, NCH, GWN, YYL, JHJ, TG, LDI, MAB, EAR, QV, XYL, JAH, GWB, DWG, ALW, RDO, GMT, GKS, KLM, VB, JS, WTF and MBQ.

In addition, Max Shumila, Mary Shumila, Betty Pettapiece, Gail Lamoureux and Ken Oneschuk also participated in the event.

Supporting organizations: Winnipeg ARES, Winnipeg Amateur Radio Club, Winnipeg Senior Citizens Radio Club, Manitoba Repeater Society, University of Manitoba Amateur Radio Society, Pathfinders Amateur Radio Club, South-Central ARES, Manitoba ARES and the Mobile Emergency Communications Group.

In due course a more detailed report will be posted on both the Winnipeg ARES and WARC websites.

– Jan Schippers, VE4JS

### Traffic Totals

July: 0; August: 14

### ONTARIO NORTH:

SM: Al Boyd, VE3AJB

Email: [ve3ajb@vianet.ca](mailto:ve3ajb@vianet.ca)

STM: Pat Dopson, VE3HZQ

Email: [dopsonp@vianet.ca](mailto:dopsonp@vianet.ca)

SEC: Dave Hayes, VE3JX

Email: [ve3jx@bell.net](mailto:ve3jx@bell.net)

OBM: Paul Caccamo VA3PC

Email: [va3pc@cinet.org](mailto:va3pc@cinet.org)

Website: <http://ontario.racares.ca>

### JULY-AUGUST SM REPORT:

I would like to thank all the hard working Amateurs for your volunteering for the many events. Without your support many of the services ARES and the other field services provide would not happen. I know many club members throughout the north support public service and I truly appreciate all your hard work.

– Al Boyd, VE3AJB

### SEC Dave Hayes, VE3JX report:

It has been a quiet summer throughout Northern Ontario, with many groups failing to report at all. This is just a reminder that part of our job as emergency coordinators is to regularly, i.e., monthly, report any activities, plans or other news that involves your group. Your reports encourage us all and help us in being united in this common cause.

Apparently, unfilled vacancies are plaguing some areas. There does seem to be a general antipathy within our Amateur ranks. I think the key is to make providing emergency communications fun. True, it's serious "business", in that we want to develop our individual skills and overall response capabilities. But, that can be fun and rewarding. Our volunteers need to look forward to their ARES activities. They need to feel they are accomplishing something good. Appreciation shown towards them goes a long way to engendering enthusiasm. Emphasize to prospective recruits the great times they will have as part of our teams.

Just some thoughts you already know and are practising, but are worth repeating anyway.

Our Simulated Emergency Test is coming up this fall and will probably be over by the time you read this. Our concentration this year should be on messaging using various texting facilities. The Section has been experimenting and working with D-Star/D-Rats, NBEMS, WL2K, Packet, etc. HF Winlink is a great tool to have in our arsenal, particularly in more remote communities. We look forward to the reports on how these things have worked out during the SET.

It appears that the PEOC may not be operational during this SET, as it is being moved to another location. However, a Winlink address has been set up to simulate communications with it.

#### **Amethyst DEC Fred Lesnick, VE3FAL report:**

Many thanks to those who continue to support the Northwestern Ontario ARES Net on 3.750 MHz daily at 2015 local time. The Net Control Stations appreciate your continued support, and without you the net would be very boring for these folks. We have a few very dedicated NCS operators who never miss a day. We have a few vacant spots during the week but that is to be expected. The net does run 365 days of the year so please drop in and check in.

I would really like to thank this OM/YL NCS combination for their dedication to the net. Norm and Linda Bell, VE3XRC and VE3XLB. These two have continued to keep the net going and without fail send in those monthly net reports. Many thanks Norm and Linda for your dedication to ARES.

It was a rather quiet July in **Thunder Bay** other than all the rain we have had. A fair number of thunderstorms have remained active in the district but the fire hazard again this year has remained low.

There was only one event that I am aware of in July and that was the Thunder Bay Triathlon at Boulevard Lake. It took place on July 28 with a number of Amateur Radio operators taking up posts along the route. It was a cool, windy and drizzling day that day but everyone seemed to enjoy the event.

The local 2 meter ARES net continues to run each week in Thunder Bay on 147.060-

One concern from one of my Western ECs is the number of vacant spots we have in our District. I have tried to locate Amateurs to fill these spots but with no one responding or lack of operable Amateurs in those areas.

The digital thing is still a bit of a bee in some bonnets. I think when the ship hits the sand we will find out just how capable or incapable we are in a disaster. The train wreck in Quebec is something that we could easily see in our area on the Northern train route or the Canadian Pacific line that runs along the Trans-Canada Highway.

August was also a quiet month in the City of Thunder Bay and surrounding districts. For the better part there has been no summer in the Northwest due to the fact that we have had lots of rain and very cool temperatures.

#### **Albany DEC reports:**

**Elliot Lake** EC Dave Sutherland, VE3SUT, reported that they had an annual picnic there at the local park on August 18. He said there was "not a big turnout but we had a good time. We had six people from out of town and a total of 22, but all went well."

The **Sault Ste Marie** group is considering the possibility of setting up a D-Star system. This would help provide a local facility for digitally handling messages. The **Echo Bay** group would also benefit from such an installation.

#### **Magnetawan DEC Paul Caccamo, VA3PC, report:**

Five Amateurs (VA3PC, VA3BDR, VA3CMX, VE3GMG and VE3YUI) and 30 other communications volunteers participated in the 2013 Summer in the Park Festival at the Nipissing Waterfront & Amelia Park in North Bay. The event used commercial UHF equipment, one duplex and three simplex frequencies. The ARES/NBARC manned the command post and coordinated occurrence response with the various groups, Services, First Aid, Security and Operations. We also contacted Police and Ambulance when requested by festival personnel.

The use of a custom designed PHP/MySQL program was used to track occurrence information and resource deployment. The ARES/ North Bay ARC with occasional help from non-Amateurs have organized and run the Command Post for Summer in the Park (and previously Heritage Festival) for over 20 years. The peak activity was about 12 years ago, with a 5th frequency assigned to Transportation (Golf Cart Dispatch) and a total of 80 UHF portables.

#### **North Bay & Area EC Bill Silver, VA3SPT, reports:**

It was our 18th year in providing communications to "Lost in the Rocks and Trees", Ontario's Toughest Mountain Bike Race which was held on (August 10 in Mattawa. The following nine Amateurs participated in the event: VE3GMG, VE3BDR, VA3CMX, VE3MF, VA3SK, VE3YO, VE3TGI, VA3PC and VA3SPT.

#### **Manitoulin and North Shore: SM Allan Boyd, VE3AJB for EC Jim McLean, VE3LJM, reports:**

Summer months were extremely busy for the Manitoulin Club and the ARES groups. On July 21 the Manitoulin Club hosted its annual Picnic get together at Low Island Park in Little Current. Over 70 Amateurs were in attendance from all over the area. Great food and company was had by all. In addition, communications for several parades were supplied by the ARES group to many communities on the island.

#### **DECs reporting:**

VA3s: AJV and SPT.

VE3s: LBX, JX, FAL.

#### **ECs reporting:**

VA3s: AJV, and SPT.

VE3s: LJM, SUT, RQR, JX, MXJ

VE3s: AJB for LJM, SUT, RQR, JX and MXJ.

#### **Official Bulletin Stations**

OBM Brad Rodriguez, VE3RHJ

VA3BIX, VA3RRZ, VA3STG,

VE3GIO, VE3JUJ, VE3KII, VE3SHM,

VE3VBR and VE3VY.

#### **ONTARIO SOUTH:**

SM: Ian Snow, VA3QT

SEC: Vacant

SBM: Brad Rodriguez, VE3RHJ

STM: James Davidson, VE3TPZ

Website: <http://ontario.racares.ca>

#### **JULY-AUGUST SM REPORT:**

As I'm sure was the case with most of us, the focus during the summer was on vacations and other activities. I had a reunion at Halifax which gave me an excuse to revisit Cape Breton and to check Newfoundland off the bucket list. Alexander Graham Bell's daughters donated an amazing collection of artifacts and personal papers from Bell home at Beinn Bhreagh which led to a major expansion of the Bell museum at Baddeck, Nova Scotia. The scope of the man's interests are truly amazing.

On Newfoundland a tour of many well-known sites associated with transatlantic and marine communications brought a new level of meaning to the challenges the pioneers faced. And it isn't over yet. Alongside the Cape Race Marconi company station is an HF radar installation owned by a private company. It looks well kept up, but what caught my eye was the array of common dipoles no more sophisticated than a lot of us have in the backyard.

At St John's, I met CFSO Doug Mercer, VO1DM, in person and got to operate VO1AA at the Cabot Tower. It is just a multiband dipole but with the ocean just feet away signal levels were amazing. The technology involved to "read" and display for the operator the 8 wpm microvolt signals arriving over the first generation of transatlantic cables was worth the trip alone.

I'll close with a comment on the Province of Ontario Interoperability Task Group meeting that I sat in on September 12. POINT is the stakeholder venue where interested parties coordinate their activities, and is modelled on CITIG ([www.citig.ca](http://www.citig.ca)) which developed the national strategy for a standardized emergency management methodology and modernized telecommunication system that truly will provide for information exchange from the first responder at the scene up to the national EOC. The challenge from my perspective is system design; great to have access to the information but knowing how to exploit it without being overwhelmed is a significant challenge. A proof of concept trial will begin at approximately the time that you are reading this report. The selection of technologies and vendors won't take place until next year. Visit <http://pointtaskgroup.ca/> to find the Ontario strategy, Interoperability Continuum (contained in the strategy), and OASIS. This is the future that ARES leaders need to understand because it will affect how we will be employed as an auxiliary telecommunications service, but only if we too are interoperable. When you look at the Continuum chart, take into consideration that 80% of the interoperability challenge lies in the first two rows: governance and operating procedures. The technologies we have at hand, we as the ARES need only embrace them.

I'd like to thank those who reported via the website. This has been a learning experience for me too. I'm cautiously optimistic that by the next reporting period we will have your inputs published in the form of a blog post.

I'll close on the note that I desperately need some assistance if I'm to provide the Amateur Radio community in Ontario South the level of service we'd all like to see. If you could volunteer some time in the roles of Executive Assistant, public relations, or liaison with our Ontario South clubs I'd be most appreciative of the support.

#### **Activity Reports:**

On August 10, DEC Brad Rodriguez, VE3RHJ, journeyed to Wiarton (and points north) as an operator to assist the **Bruce and Grey County ARES groups** with their support for the Bruce Peninsula Multisport Race. On the 14th he attended the monthly Grey County ARES meeting.

EC Wayne McLean, VE3WWM, reports that **Dufferin County ARES** initiated a project to map area simplex coverage, one township at a time. The objective is to identify where relay stations would have to be placed should the area repeaters become unavailable.



On July 27 Wayne and John, VE3KOT, conducted a preliminary survey of Murmur recording high and low spots, coordinates, the closest address, and in some locations took pictures. The test itself was conducted on August 24 by John, VA3KOT, Hal, VE3KNNY, Bert, VA3BMY and Paul, VE3TA, in their mobiles. Wayne and Phil, VE3FAS, operated at Phil's house to record data. It was determined that the area beyond direct range from the Shelburne EOC can be covered from a single point at the corner of 2nd Line East and County RD 21. The next survey will be in Mono township.

EC Bob Droine, VE3LKD, **Grey County ARES**, reported that several members were deployed to assist Bruce County ARES during the 100 kilometre Bruce Peninsula Multisport Race on August 10.

EC Tim Eaton, VE3RTE, **Bruce County ARES**, reported that seven area Amateurs participated again this year in the communications group for the Bruce Peninsula Multisport Race. This race attracted over 100 participants for the short course (25 kilometres of kayaking and biking) and 46 competitors for the long course (100 kilometres of biking, running and kayaking). The Bruce Peninsula features rugged terrain and difficult conditions, not only for the racers but for radio operators. The 100 kilometre linear distance plus the course location on the top and bottom of the Niagara escarpment means there are many dead spots for radios and cellphones. Organizers were happy again with our contribution this year and we are very pleased with the training and operating time that it gave us. Some of our operations included helping OPP manage traffic on a hill section of roadway when cyclists were approaching, working the Central Control for health and safety and logistics issues, reporting on race progress, and staying in contact with safety boats during the kayaking part of the race. We are looking forward to being involved again next year.

EC Bill Hoad, VE3DPG, of the **Sarnia-Lambton ARES Group**, reported meeting with the Sarnia CEMC three or four times a month at irregular intervals (just keeping in touch).

EC Ian MacBrien, VE3ERL, reports that 11 members of the **Niagara North ARES Group** and the Niagara Peninsula ARC combined forces to provide deployed HF and VHF/UHF operations during the Canal Days special event at Port Colborne on the August 3 and 4.

**Tillsonburg and Area ARES Group** EC Gordon Collins, VE3CPP, reported that the his group is reactivating after the summer break with a presentation

from Tillsonburg Fire Chief Jeff Smith who will be speaking on the "Incident Command System".

**Stratford / Perth ARES EC Alle Brander, VE3CWL**, reports that his group has completed the changeover/installation of antennas at all the fire halls in Perth County to dualband models. He is looking for additional radio operators.

— Ian Snow, VA3QT

**DECs reporting:** VE3RHJ

**ECs reporting:**

VE3s: WWM, LKD, RTE, DPG, ERL, CPP, CWL.

**OBS reporting:**

**July:** VE3GIO, VE3VBR

**August:** VE3GIO, VE3VBR

**Traffic Totals:**

**July:** VE3RHJ 13, VE3TPZ 10

**August:** VE3RHJ 14, VE3TPZ 20

**Public Service Honour Roll:**

**July:** VE3RHJ 74, VE3TPZ 60

**August:** VE3RHJ 115, VE3TPZ 74

#### ONTARIO EAST:

SM: Michael Hickey, VE3IPC

Email: ve3ipc@gmail.com

SEC: Vacant

STM: Vacant

OBM: Brad Rodriguez, VE3RJH

Email: ve3rhj @ rac.ca

Website: <http://ontario.racares.ca>

#### JULY-AUGUST SM REPORT:

I trust that you have all had a great and enjoyable summer.

As SM and SEC I look forward to the After Action Reports (AAR) from all ARES and EmComm groups that have participated in the Ontario 2013 annual SET. The Ontario Council have agreed to continue to having a province-wide SET to encourage EmComm group capabilities in sending in a message using the IMS-213(R) form that would be originated by their local Municipal Emergency Management Coordinator (or simulated one) to be sent to the PEOC duty officer when all normal means of communications are either not reliable or unavailable.

Groups that have held their own local SET are also asked to send in their After Action Reports (AAR) as provided in the Provincial SET documentation Annex.

I am looking for someone to take the position of SEC for this Section, someone with demonstrated leadership skills, admin experience and a sense of commitment to the ARES EmComm program. The candidate needs to have a grasp of the bigger picture of ARES.

I am also looking for someone to take the DEC position for the Severn ARES District. This position has been vacant for some time and has the same requirements as the SEC mentioned above.

I will gladly work with anyone wanting to fill either of these two senior positions. You will not be working alone and you will have my full support as SM. You will have the benefit from my 14 years of ARES EC & DEC experience in support of your building the ARES Section; by working the ARES Districts that are in need of active leadership and instilling reliable ARES / EmComm group capabilities in general. If interested in either of these positions or wish to have more information to help with your consideration, please do not hesitate to contact me directly.

If you want a strong and reliable ARES presence to work well in your community, get involved and make it happen. You can contact me at VE3IPC@gmail.com or call 613-679-4474.

#### Eastern Ontario ARES District group reports:

##### Ottawa ARES/EMRG Group:

*Submitted by AEC Mike Kelly, VE3FFK, reporting for Ottawa ARES EC/ EMRG team leader Richard, VE3UNW*

The Ottawa ARES/EMRG Group had another month of infrastructure work at EMRG / Ottawa ARES in July.

There was the usual repeater test session on July 3, conducted by Dave, VE3KMY, and assisted by Ron VA3ACZ, Tim, VA3PYC and Mike, VE3FFK. Repeater VE2CRA seemed to be having problems this month, but the digital systems were up and running.

On July 20 there was a work session at the communications centre where items were sorted in to "Keep, Sell or Scrap" categories, and much space once more was made usable. Clayton, VA3CBJ, Harold, VA3UNK, Rick, VE3IHI, Stuart, VE3SMF, Richard, VE3UNW and Gord, VE3XGP, were led by Peter, VE3BQP, on this project. Future work sessions will focus on completing the infrastructure wiring and building up the fixed site and portable kits. Some of this includes:

- 1) Finalizing the wiring of the two 30 amp power supply/battery chargers that are now in the repeater rack, as well as the two 15 amp ones in the communications room.
- 2) Setting up and networking the computers including a desktop and laptop with radio programming software installed.
- 3) Building up and installing in cabinets the shelves and radio systems for the City EOC, Fire dispatch, backup dispatch and Fire HQ.
- 4) Wiring and programming VHF and UHF radios for voice and packet so that they are ready for deployment.

On July 23, Peter, VE3BQP and Mike, VE3FFK, did some re-routing of the coax between the antennas and the radios at the Ottawa office of the Red Cross to accommodate changes in the locations of emergency operations within the building. This had the happy result of shortening the lengths of these coax runs. At the same time, SWR sweeps of the antennas were also done and proved satisfactory.

The Ottawa ARES/EMRG Group in August was ticking over at a low level, as is usual for the summer months.

The monthly repeater test went well on August 7 under the direction of Dave, VE3KMY, with the participation of Ron, VA3ACZ, Tim, VA3PYC and Mike, VE3FFK. VE3PYC and VE3FFK also frequently used the Winlink node and BBS on 145.030 and tested the BBS on 145.010. All were working normally for most of the month. As part of this process, and to provide something to read on the BBS, extracts from the weekly RAC Ontario ARES bulletin are posted on the 145.030 BBS. They remain available for about a week.

There was another work session at the communications centre on August 10. Peter, VE3BQP, was assisted by Ron, VA3ACZ, Wayne, VE3CZO, AEC Mike, VE3FFK, AEC Rick, VE3IHI, Brian, VE3UUU, and Alan, VE3ZTU. Much of the work consisted of sorting tagging and packing various items. Rick spent the morning working on the repeater cabinet, discovering and correcting some factory installed connector problems and making changes to the power wiring. It seems that in addition to a small core of regulars, each call for workers results in a few others coming in to help. Thanks go to all who have helped out.

##### Prescott-Russell-ARES Group:

*Submitted by PR-ARES Group EC Lance Peterson, VA3LP:*

The Prescott-Russell (PR)-ARES Group was busy in July supporting two local communities with activities. On July 1, the group provided security at the Clarence-Rockland Fireworks. In attendance were Jim, VA3KV, Harry, VA3ZAK (also operating HF on Canada Day), EC Lance, VA3LP, Chris, VA3NKE, Ray-Allen, VA3ONN and his wife Suzanne, Ron, VA3RRZ, SM Mike, VE3IPC, George, VA3SUS and his friend Patrick.

In mid-July a few of the members volunteered to provide support to the Wendover Western Festival. This is an opportunity to bring in some funds for the group. In support of this was Chris, VA3NKE, EC Lance, VA3LP, Harry, VA3ZAK, Ray-Allen, VA3ONN and his wife Suzanne, and George, VA3SUS, and his friend Patrick.

There was the usual Tuesday evening ARES Nets but the turnout was low as most folks are away for the summer. There were no official meetings for the summer.

The Prescott-Russell (PR)-ARES Group saw August to be a very slow month. The usual Tuesday night Nets brought a few folks out and a few more came out for the Thursday evening get-togethers in Rockland at the Chamberlain Centre. Most of our members were busy with family and travelling. Some discussion is still ongoing on Broadband Hamnet and how it can be set up in our area. A few folks are interested in making the July QST article on a Bluetooth interface into a group project for this fall and winter.

#### **Stormont Dundas and Glengarry (SD&G)-ARES Group:**

*Submitted by SD&G ARES group coordinator EC Earle DePass, VE3IMP*

The Stormont Dundas and Glengarry (SD&G)-ARES Group's close association with the Seaway Valley Amateur Radio Club (SVARC) Inc. continues. The club has taken a "holiday" for July and August. During our last meeting held on June 26 updates on ARES activities were provided to the membership.

The RAC Official ARES Bulletins continue to be read each Monday, at 7 pm local on the club's 2m Net conducted on VE3SVC (147.180 MHz+). Amateurs are also asked to check in on the VE3MTA (UHF) repeater. This process confirms the serviceability of our repeater systems at least once a week should they be required by ARES.

Our expansion to "SD&G ARES" from the former "City of Cornwall ARES" continues. An ARES presentation was made at the North Stormont's annual Emergency Management Training and Exercise on June 19 at North Stormont Place, Avonmore.

#### **Lanark/North Leeds (LNL)-ARES Group:**

*Submitted by AEC Norm Hagan, VE3VY, for EC Barrie Crampton, VE3BSB*

The Lanark/North Leeds (LNL)-ARES Group had four weekly 2m Net sessions during the month and five weekly breakfast meetings.

Dennis, VA3DOY, our newest Amateur, is preparing to install a Windom antenna at his QTH. John, VE3PYX and AEC Norm, VE3VY, are looking forward to a QCWA cruise to the Caribbean in late October.

Digital update: A new Yaesu FT7900 transceiver and a KPC3+ TNC have been installed at the VE3REX-7 site near Westport. A total of \$2,500 in donations has now been received. The last \$500

came from the Chamber of Commerce. Additional installation work is contemplated including a solar power installation. A Paclink kit is being assembled to be used as a loaner for anyone wanting to try their hand at digital communications. George, VE3GXW, is actively engaged in this project. The digital node at Kingston was moved from the John Orr Tower to a new location on a 200-foot tower on a hill north of Kingston. An additional node VE3FPN-7 has been installed at the fire station in Sydenham. The work in Kingston has been carried out by the Frontenac EmComm Group in Loyalist ARES District. Daily and weekly transmissions take place to ensure path and equipment reliability.

#### **Severn ARES District Group Reports:**

##### **Peterborough ARES Group report:**

*Submitted by EC Terry, VA3MTT*

The Peterborough ARES group conducted radio checks at the EMS building and in the Mobile Command Vehicle; the portable antenna was set up and tested with several Repeaters the test were done by VE3IQZ and EC Terry, VA3MTT. Radio checks were also done at the Police station.

New antennas have been installed at the Police station, Sherbrooke Fire Hall and also at the new Clonsilla Fire Station in early August. This is a new location and will be added to our monthly rotation for technical checks.

The ARES group, in conjunction with the Peterborough Amateur Radio Club, had a great Field Day with four stations and a GOTA station. There was lots of public interest as we were in a new place this year, a City Park, which worked quite well, the best results in 10 years!

The ARES group has also completed communications for the MS walk and the Purina Guide Dog Walk. This is a yearly event and always has great appreciation by both organizations.

Rick, VE3IQZ, continues to do the job as Official Bulletin Station (OBS) for Peterborough ARES and has been reading them on our weekly Wednesday night Net on 146.625 at 7 pm. There has been good feedback from members and non-members regarding the Ontario bulletins.

##### **Loyalist ARES District Group Reports: N/A**

– 73, Michael Hickey, VE3IPC

**OBS reporting:** VA3BIX, VE3KII, VE3VY, VE3ZJS.

**Districts reporting:** Eastern Ontario.

**ECs reporting:** VE3VY, VE3FFK, VE3YX, VA3LP, VE3IMP.

**DECs reporting:** Lance, VA3LP.

**OBS reporting:** VA3BIX, VE3KII, VE3VY and VE3RRZ.

#### **ONTARIO GTA SECTION REPORT**

SM: George Duffield, VE3WKJ  
ASM: Vic Henderson, VE3FOX  
ASM: James King, VE3ETZ  
SEC: Rick Harrison, VA3NV  
SBM: Brad Rodriguez, VE3RHJ  
STM: Vacant

##### **JULY-AUGUST SM REPORT:**

As I write this report, summer is all but finished and the clubs in the GTA are beginning their fall activities.

One of the key events is the Simulated Emergency Test of October 26. This province-wide communication test comes at a time when there is change occurring at Emergency Management Ontario. EMO has informed us that a new reporting structure is planned that will have EMO reporting through the Office of the Ontario Fire Marshall. The office will be housed in a new structure dedicated to the Fire Marshall and the Office of the Ontario Coroner. This building will be located near the intersection of Highway 401 and Keele Street in the Downsview area of Toronto.

EMO also seems to have downloaded emergency response to local CEMCs, which suggests that EMO will only become involved in a situation if requested by local authorities, through a declaration of an emergency. If this is so, it provides clear direction to DECs and ECs in the GTA, and for that matter, across the province, to get to know your CEMC a lot better.

As communications change, the role of the Amateur Radio operator will also change. We must be ready to respond to a changing role and to methods of communication within our service that meet the needs of our clients. Voice and occasionally CW will continue to be required, but we may be asked to transmit greater volumes of information in digital modes that require more than simple station to station communications. As Emergency Management Ontario changes, within the Office of the Fire Marshall, Amateur Radio must also adapt to ensure that our role meets the requirements of those we serve.

In the GTA Section, we are working to bring this awareness to all the clubs and are inviting those operators who are not club members to get involved in ARES. It is incumbent on us as radio operators to be able to respond immediately if we are called to supply communication services during an emergency.

If we are to be relevant, training is essential. There will be no time for training during a disaster. If an operator has to figure out how to use an unfamiliar radio at a disaster location, that operator is of little use.

If an operator does not know how to write and send a piece of written traffic using Winlink or Outpost, he or she is wasting our time.

So if you are interested in this aspect of Amateur Radio, get involved, get trained and get on board. Find out who your local ARES coordinator is and say you want to be part of the response.

#### **RAC FIELD ORGANIZATION REPORTS**

##### **National Traffic System (NTS) Net Reports**

<b>Net (Manager)</b>	<b>Sessions</b>	<b>QNI</b>	<b>QTC</b>
<b>July 2013:</b>			
BCEN (VE7XLH)	31	223	29
BCYTN (VE7WJ)	31	540	30
CECA (VE7GN)	5	60	14
MEPN (VE4LB)	22	211	0
MMWXN (VA4GD)	31	556	0
MRS (VE4HK)	8	239	0
MSMN (VE4AEW)	23	563	0
OPN (VE3XRC)	31	93	30
<b>August 2013:</b>			
BCEN (VE7XLH)	31	206	26
BCYTN (VE7WJ)	31	584	40
CECA (VE7GN)	4	47	6
MEPN (VE4LB)	27	369	5
MMWXN (VA4GD)	31	629	2
MRS (VE4HK)	9	283	0
MSMN (VE4AEW)	22	587	0
OPN (VE3XRC)	31	144	40



One of the ways to receive training is through involvement in community events. There are many such occasions during the autumn and winter seasons and the GTA clubs have been active in these events. There are examples of these activities in the reports that follow.

I am particularly thankful to those operators who have accepted positions of responsibility within their groups and clubs. I continue to encourage everyone, RAC members and non-members alike, to share their thoughts and recommendations with me or with the RAC Executive. This is your organization. It cannot reflect your views if you do not share them.

#### SEC Rick Harrison, VA3NV:

Planning for the upcoming SET on October 26 continues. Lead planner for the event (GTA West DEC VE3CEZ) has even involved Environment Canada to add realism to the scenario. Efforts are underway to get the Red Cross to actively participate as well.

Communications with the ARES team in York Region has been established. Things look promising.

Things are not looking so well in Durham Region. The volunteer for EC has stepped down due to other commitments. A search for a new candidate is underway. Hopefully, we will be able to arrange a general ARES meeting for interested parties in Durham in the next month or two. From that we may locate leadership candidates for the area.

Halton and Peel ARES groups continue to be the backbone of the GTA Section.

#### DEC (GTA West) Glenn Marett, VE3CEZ:

I met with Geoff Coulson at Environment Canada to discuss the October SET and some good insight for the scenario was received.

There were some covered events for ARES groups this month however an increase in event coverage should come with September.



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The October SET is well into planning with the scenario down on paper and the inclusion of SSTV "mock" images should present an interesting aspect to the event.

#### Brampton/Caledon ARES:

Brampton/Caledon ARES had activities in July that included Canada Day celebrations during which our ARES members coordinated communications for the city of Brampton CERV volunteers, Security and Events groups.

#### Burlington ARES:

Burlington ARES is undergoing a membership review that is 75% complete at this time. Membership has been reduced at this time but will be more accurate.

#### Georgetown/HARC ARES:

HARC ARES has no activities to report for August. VE3PKG Packet node operational 100% uptime and RMS Gateway also operational.

VHF (VE3OD) and UHF (VE3HR) repeaters operational, both with 100% uptime in August.

#### Mississauga ARES:

Mississauga ARES participated in the City of Mississauga organized

Youth Summer Camp and did a presentation on Ham Radio and ARES to the youth aged 10 to 16.

The program was split into a classroom instruction followed by a hands-on session outside. Two radios (HF and VHF) were set up for this purpose and the youth enjoyed talking over the radios and appreciated the role of Amateur operators in emergencies. Positive feedback was received from the Emergency Management Coordinator of the City of Mississauga.

#### Oakville/Milton ARES:

As part of the preparations for the SET in October, VA3PRE and VE3OGP took inventory and did maintenance on the equipment located at the Milton Red Cross. Plans are in place to do the same at the Oakville Red Cross Office.

#### DEC/ECs reporting:

DEC: VE3CEZ.

EC: VA3KRA, VE3OGP, VA3TMB, VA3RMU, VA3RJS (AEC).

#### Official Bulletin Stations:

VE3SHM, VE3JUZ

— George Duffield, VE3WKJ

#### QUEBEC:

SM: Vacant

SEC: Normand Pitre, VE2NHK

Email: [ve2nhk@rac.ca](mailto:ve2nhk@rac.ca)

#### JULY-AUGUST SM REPORT:

On July 1, the **Montreal Amateur Radio Club (MARC)** held a booth once more at Millennium Park in Dorval for the Canada Day festivities. The following Amateur participated in the event: Georges, VE2NGH, Jim, VE2VE, Vern, VE2QQ, Sheldon, VA2SH, Pierre, VE2PPF, Marc-Andre, VE2EVN, Carole, VA2NDJ and Normand, VE2NHK.

Le 1<sup>er</sup> Juillet, le club radio amateur de Montréal (MARC) a encore tenu leur kiosque au parc millénium de Dorval durant les festivités de la fête du Canada, voici ceux qui étaient présent tout au long: Georges, VE2NGH, Jim, VE2VE, Vern, VE2QQ, Sheldon, VA2SH, Pierre, VE2PPF, Marc-Andre, VE2EVN, Carole, VA2NDJ et Normand, VE2NHK.

Le Club Radio Amateur de la Vallée du Richelieu (VE2CVR) a pris en charge les communications d'urgence pour la 25<sup>e</sup> année du Festival international des montgolifières de Saint-Jean-sur-Richelieu.

Et la sécurité aux aires d'envolées du 10 Aout au 18 Aout, ils ont eu le support de 60 amateurs et non-amateurs, membres et non-membres pour un total de 330 présences durant les neuf jours.

The **Richelieu Valley Amateur Radio Club (VE2CVR)** were in charge of communications and security at the take-off area for the International Hot Air Balloon Festival of Saint-Jean-sur-Richelieu from August 10 to 18.

They received support from 60 Amateurs and non-Amateurs, members and non-members for a total of 330 attendees throughout the nine days of the event.

Le 18 Aout était le 2<sup>e</sup> **Ironman du Mont-Tremblant** sous la supervision de Pierre-Alain, VA2GPA, et l'aide Frederic, VE2ONR,

L'APRS pour les trois véhicules des commissaires de tête et du véhicule du dernier participant. Tout a très bien fonctionné La SQ et la SM de Tremblant se fiaient nos systèmes pour le contrôle des routes ainsi que la MTQ et l'organisation Ironman pour vérifier les temps de passe.

The second **Mont-Tremblant Ironman** was held on August 18 under the supervision of Pierre-Alain, VA2GPA and with the assistance of Frederic, VE2OR.

Their function was to operate APRS for the three commissioners' vehicles, the head vehicle and the vehicle of the last participant. Everything worked great. SQ and SM Tremblant relied on our systems for the control of roads and the MTQ and Ironman organization to check the time that the vehicles passed by.

— Normand Pitre, VE2NHK

Le Club Radio Amateur de la Vallée du Richelieu (VE2CVR)  
The Richelieu Valley Amateur Radio Club (VE2CVR)





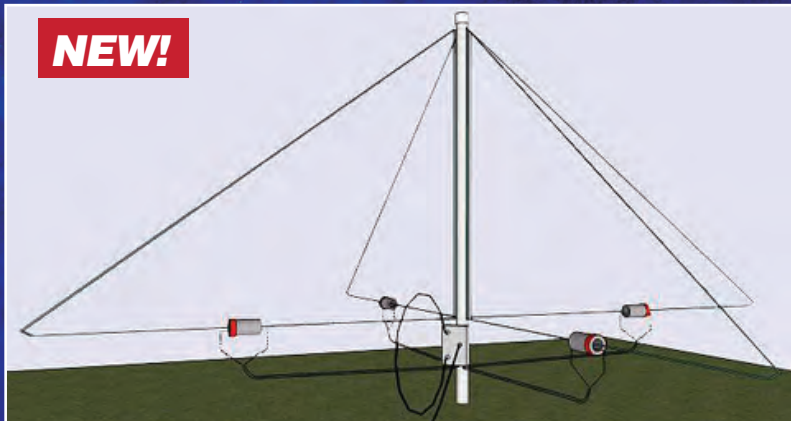
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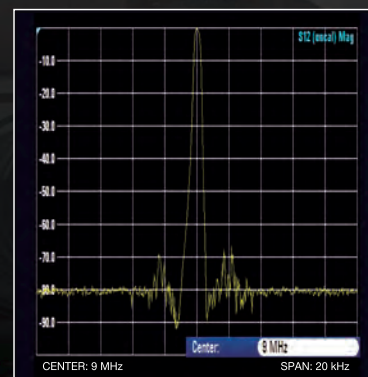
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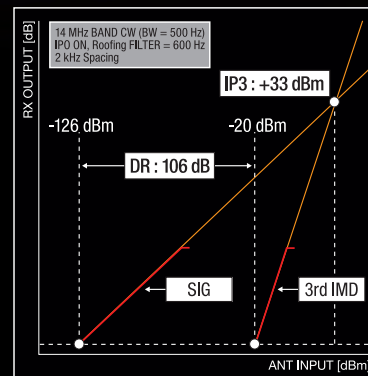
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